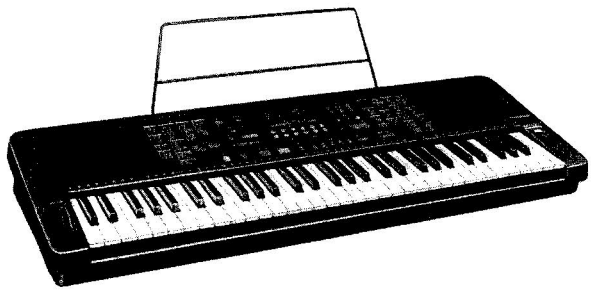
ORDER NO. EMID941531
A5

Service Manual

PCM Keyboard

SX-KN500/KZ450

(M), (MC), (XM), (EN), (EH), (EF), (EZ), (EW), (EA), (EP), (EK), (XL), (XR), (XS), (XD), (X), (XT)



AREAS

MODEL NO.:SX-KN500

(EN): Norway, Sweden, Denmark, Finland
(EH): Holland, Belgium
(EF): France, Italy
(EZ): Germany
(EW): Switzerland
(EA): Austria
(EP): Spain,Portugal,Greece, Russia
(EK): the United Kingdom
(XL): New Zealand
(XR): Australia

MODEL NO.:SX-KZ450

(M): U.S.A.
(MC): Canada
(XM): Mexico
(XS): Malaysia, Singapore
(XD): Saudi Arabia, Kuwait
(X): the Middle East, Indonesia, Hong Kong, the Philippines, Thailand
(XT): Taiwan

⚠ WARNING

This service literature is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service literature by anyone else could result in serious injury or death.

■ Specifications

KEYBOARD		61 KEYS (WITH INITIAL TOUCH)
SOUND GENERATOR		PCM
MAXIMUM NUMBER OF NOTES PRODUCED SIMULTANEOUSLY		28 NOTES
SOUNDS	SOUND SELECT	128 SOUNDS, 1 drum set
	EFFECT	STEREO CHORUS, SUSTAIN
	SOUND EFFECT	○
RHYTHM	RHYTHM SELECT	100 PATTERNS
	CONTROLS	START/STOP, SYNCHRO, INTRO & ENDING, FILL IN, VARIATION, TEMPO
DIGITAL REVERB		○
AUTO PLAY CHORD		ONE FINGER, FINGERED, ONE TOUCH PLAY
DUET		○
PANEL MEMORY		SET, 1- 4
SEQUENCER		STORAGE CAPACITY:APPROX. 2800 NOTES INPUT MODES :REALTIME FUNCTIONS:OVER DUB, ERASE

Technics/Panasonic

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COMPOSER	PATTERNS:NORMAL, INTRO, FILL IN, ENDING 5PARTS (BASS, ACCOMP 1, 2, 3, DRUMS) STORAGE CAPACITY:APPROX.1960 NOTES INPUT MODE:REAL TIME EDIT FUNCTIONS:CLEAR, PERCUSSION CANCEL MEMORY:2	
PITCH BEND	○	
DISPLAY	LED (3DIGITS), EXIT	
CONTROLS	MAIN VOLUME, BALANCE, TRANSPOSE, CONDUCTOR	
DEMO	○	
MODE SET	GM MODE SET, TUNING, TOUCH CURVE, SPLIT POINT, FOOT SW SETTING, REVERB SETTING, MIDI BASIC CH, LOCAL CONTROL, ACCOMP MIDI OUT, DRUM SEND MODE, BULK DUMP	
TERMINALS	DC IN 12V, PHONES/LINE OUT, MIDI (IN, OUT), FOOT SWITCH	
OUTPUT	KN500:2 W × 2 (WITH BATTERIES), 5 W × 2 (WITH SY-AD6/AD6B/AD7 AC ADAPTOR) KZ450:2 W × 2 (WITH BATTERIES), 4.5 W × 2 (WITH SY-AD6/AD6B/AD7 AC ADAPTOR)	
SPEAKERS	12 cm × 2	
POWER REQUIREMENT	BATTERIES:DC 9 V (USING R20/LR20["D" SIZE, UM-1] BATTERIES × 6)	
	AC:WITH SY-AD6/AD7 AC ADAPTOR	AC 120/220/230/240 V, 50/60 Hz AC 120V 60 Hz (NORTH AMERICA AND MEXICO)
	AC:WITH SY-AD6/AD6B/ AD7 AC ADAPTOR	AC 230 V, 50/60 Hz (NEW ZEALAND AND EUROPE EXCEPT FOR UNITED KINGDOM)
DIMENSIONS (W×H×D)	96.4 cm × 11.2 cm × 36.2 cm (37-15/16" × 4-13/32" × 14-1/4")*	
NET WEIGHT	6.8 kg (15.0 lbs)*	
ACCESSORIES	AC ADAPTOR SY-AD6/AD6B/AD7 (SOME DISTRICTS ONLY), MUSIC STAND	

Specification are subject to change without notice for further improvement.
*Without MUSIC STAND.

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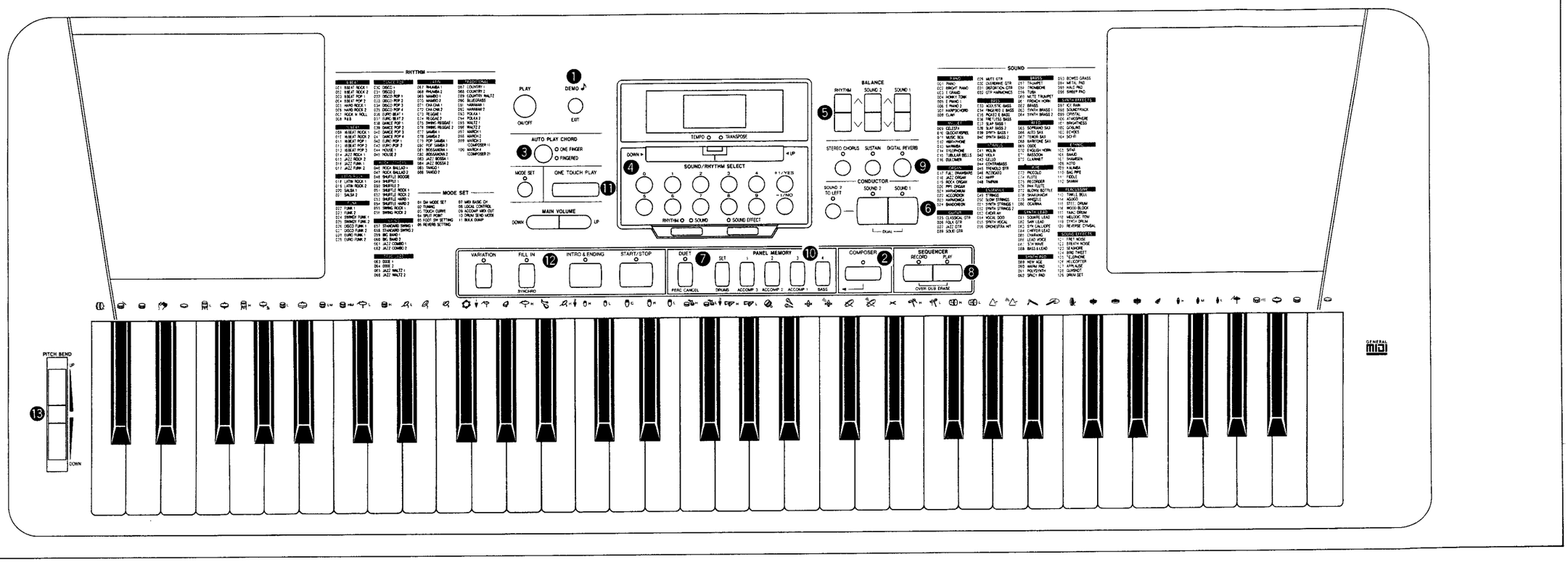
ARRANGEMENT OF CONTROL PANEL



❶ DEMO
Prerecorded performances are used to demonstrate the individual appear of the rhythms, sounds and other features.

❷ COMPOSER
Modify parts of an **AUTO PLAY CHORD** accompaniment pattern, or create a completely new accompaniment pattern.

❸ AUTO PLAY CHORD
An automatic accompaniment appropriate for the selected rhythm is produced when you play a chord. Specify chords with either the **ONE FINGER** or **FINGERED** method.

❹ SOUND/RHYTHM SELECT
Specify a two-digit number on the number pad to select a sound or rhythm.

❺ BALANCE
The **BALANCE** buttons are used to select 15 different volume levels for each part—**SOUND 1**, **SOUND 2**, and **RHYTHM**.

❻ CONDUCTOR
Used to assign the **SOUND 1** and **SOUND 2** parts to the keyboard in various ways. The two parts can even be layered (dual sound) or assigned to different sections of the keyboard (split keyboard).

❼ DUET
Chord notes played on the left section of the split keyboard are added to melody notes played on the right section.

❽ SEQUENCER
With this feature you can record an entire song, then have the performance played back automatically.

❾ Effects
Turn the **DIGITAL REVERB** button on to add reverberation to the sound. **STEREO CHORUS** gives the sound a thickness and diffusion. When **SUSTAIN** is on, the musical tones fade gradually after the keys are released.

❿ PANEL MEMORY
Set up the sounds and effects, and then store them in these 4 buttons for instant recall as you play.

⓫ ONE TOUCH PLAY
Select a rhythm and press the **ONE TOUCH PLAY** button until the panel settings change. The sounds and effects perfect for the selected rhythm are automatically set in seconds.

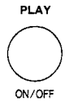
⓬ Rhythm control
START/STOP, **SYNCHRO**, **INTRO & ENDING** and **FILL IN** give you complete control over and add variety and interest to your rhythm performance.

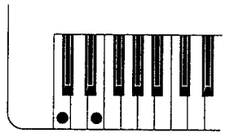
⓭ PITCH BEND
This wheel is moved up or down with your hand to create a continuous change in pitch. The wheel returns to the center position automatically when it is released.

INITIAL SETTING

■ The initial setting function is used to return to the original factory settings, and to reset the customer settings and misoperations.

1. Press the **PLAY** button to turn off the instrument.
2. While pressing the leftmost C and E keys on the keyboard, turn the **PLAY** button on again.



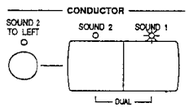
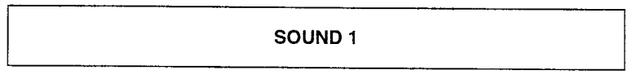
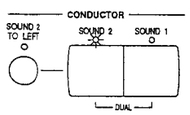
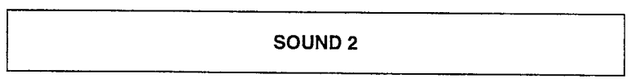
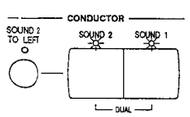
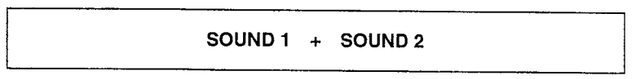
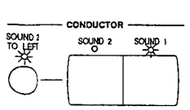
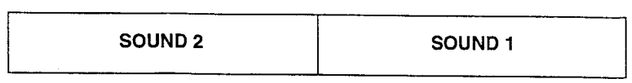


NOTE:
All stored data in the **SEQUENCER**, **COMPOSER**, **PANEL MEMORY** and other setting are initialized with this operation.

CONDUCTOR SETTINGS

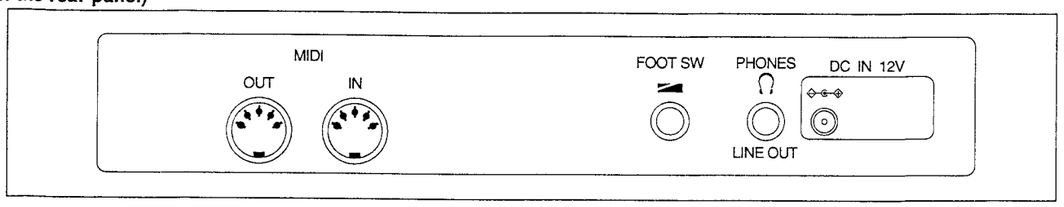
■ Assigning a part to the keyboard

The **CONDUCTOR** is used to assign the **SOUND 1** and **SOUND 2** sounds to the keyboard in different ways.
You can also adjust the volume balance of the two sounds.

CONDUCTOR settings	How sounds are assigned to the keyboard
	All the keys play **SOUND 1** sounds. 
	All the keys play **SOUND 2** sounds. 
	All the keys play both **SOUND 1** and **SOUND 2** sounds at the same time (dual sound). 
	The right keys play **SOUND 1** sounds and the left keys play **SOUND 2** sounds (split keyboard). 

TERMINALS

(On the rear panel)



MIDI (Musical Instrument Digital Interface)
MIDI is the standard specification that enables connection to equipment such as synthesizers and personal computers. Data transmission and reception are possible between the keyboard and other instruments provided with MIDI terminals.

IN : The terminal that receives data from external equipment.
OUT : The terminal that transmits data from this instrument to external equipment.

- Use a 5-pin DIN cord (less than 15 m long) for these connections.

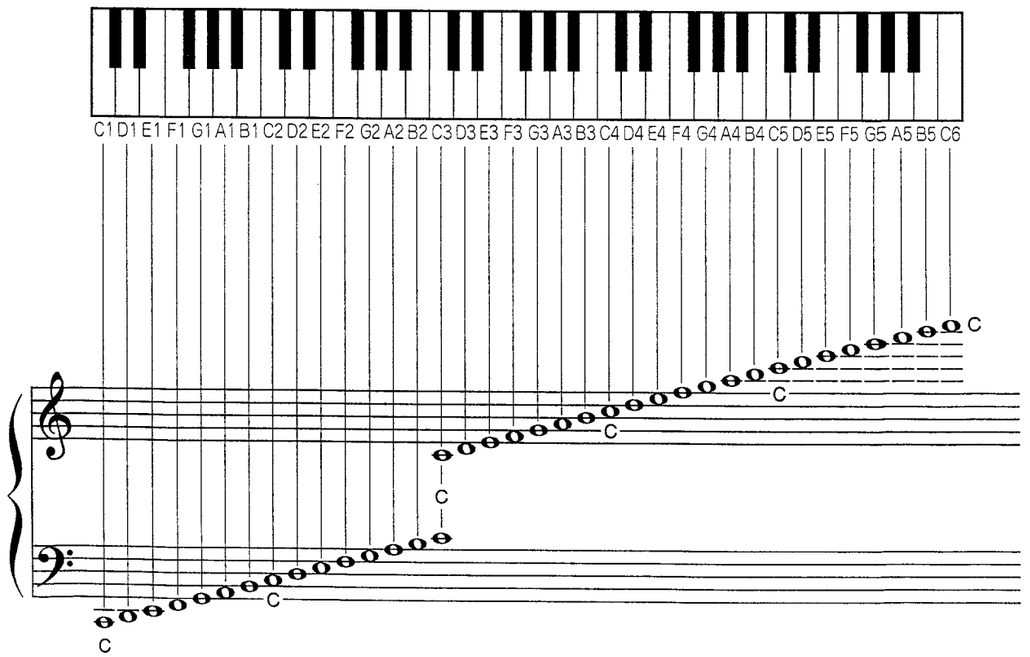
FOOT SW
The optional SZ-P1 Foot Switch (sold separately) can be connected to this terminal to control various functions.

PHONES (∩ : Use headphones with over 16 Ω impedance)/
LINE OUT (output level 1.5 Vrms, 16 Ω)
Headphones, a keyboard amplifier, or stereo equipment can be connected to this terminal. When another apparatus is connected to this terminal, the speaker system is automatically switched off, and sound is heard only through the connected device.

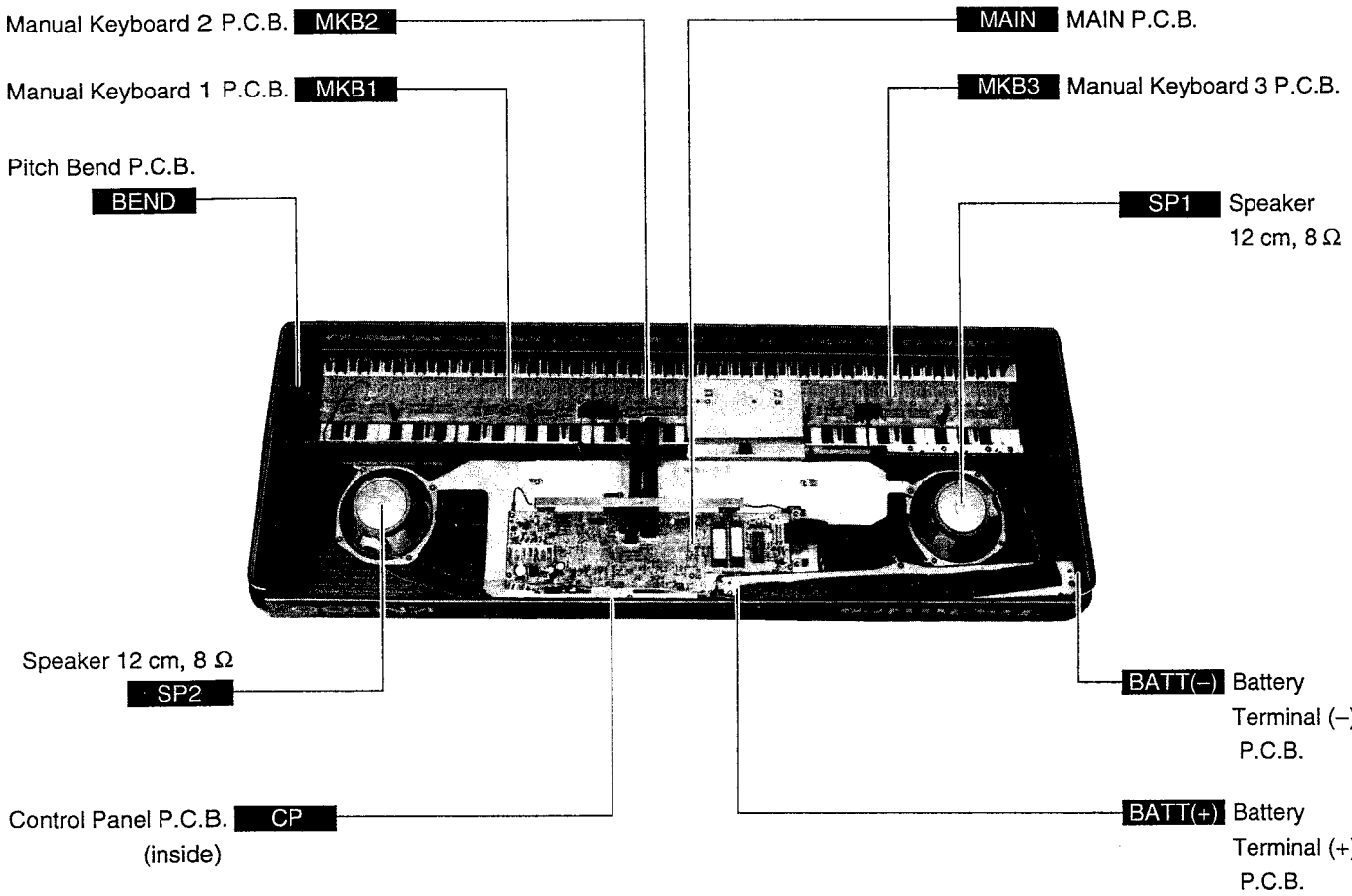
DC IN (12 V)
Standard household current can be used by connecting the Technics SY-AD6(B) /AD7 AC adaptor between a wall outlet and the DC IN 12 V terminal on the instrument.
- Use of a different AC adaptor may damage this instrument.

KEYBOARD RANGES

This keyboard features Touch Response, by which you control the volume by playing the keys harder or softer.



PARTS LOCATION

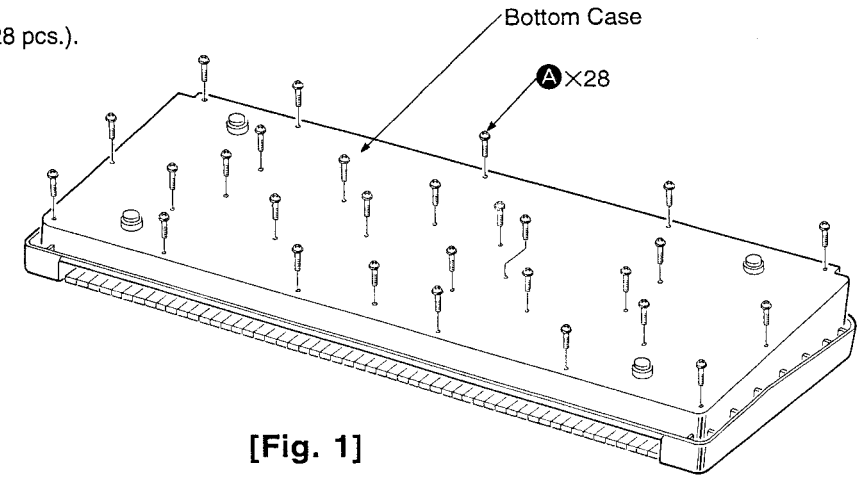


[Photo-1]

DISASSEMBLY INSTRUCTION

1 Removing the bottom case

1. Turn the keyboard cabinet upside down as shown in Fig. 1.
2. Remove the screws (Ⓐ 28 pcs.).



[Fig. 1]

2 Removing the MAIN and CP printed circuit boards

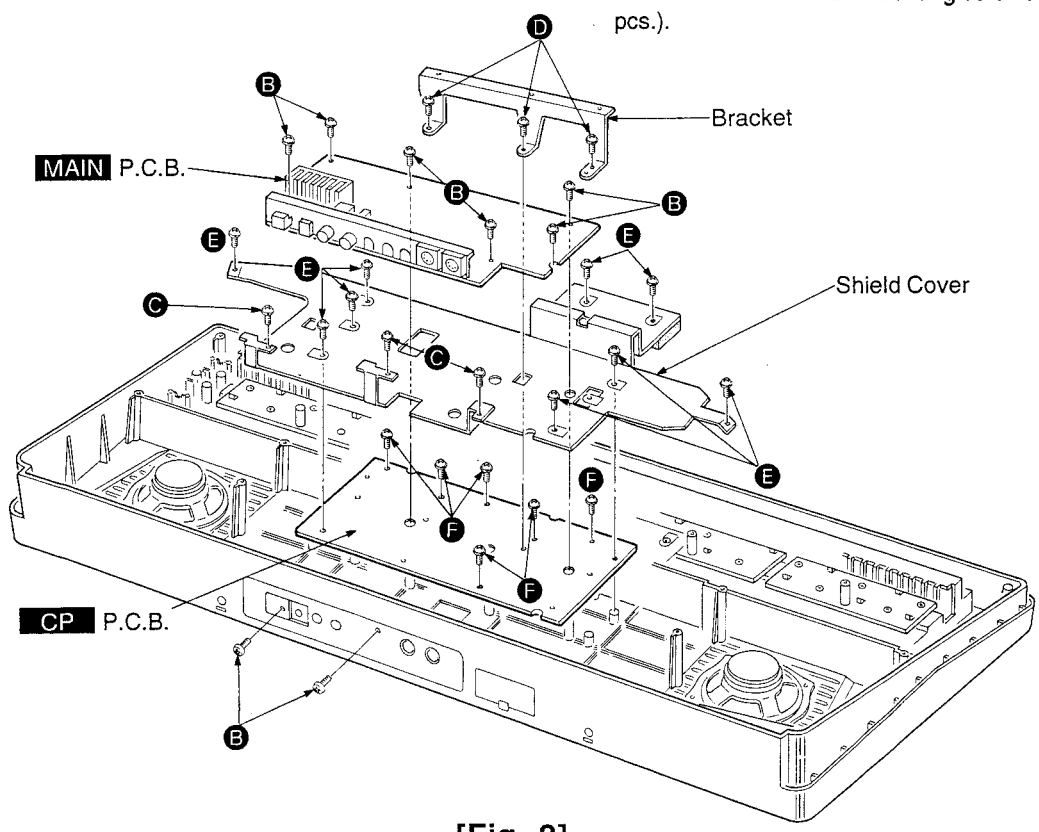
• Remove the bottom case (see step 1).

MAIN P.C.B.

1. Remove the MAIN P.C.B. mounting screws (Ⓑ 8 pcs. and Ⓒ 3 pcs.).

CP P.C.B.

1. Remove the MAIN P.C.B..
2. Remove the bracket holding screws (Ⓓ 3 pcs.).
3. Remove the shield cover holding screws (Ⓔ 9 pcs.).
4. Remove the CP P.C.B. mounting screws (Ⓕ 6 pcs.).



[Fig. 2]

3 Removing the BEND, MKB 1, 2, 3, BATT(+) and BATT(-) printed circuit boards

- Remove the bottom case (see step 1).

BEND P.C.B. Ass'y

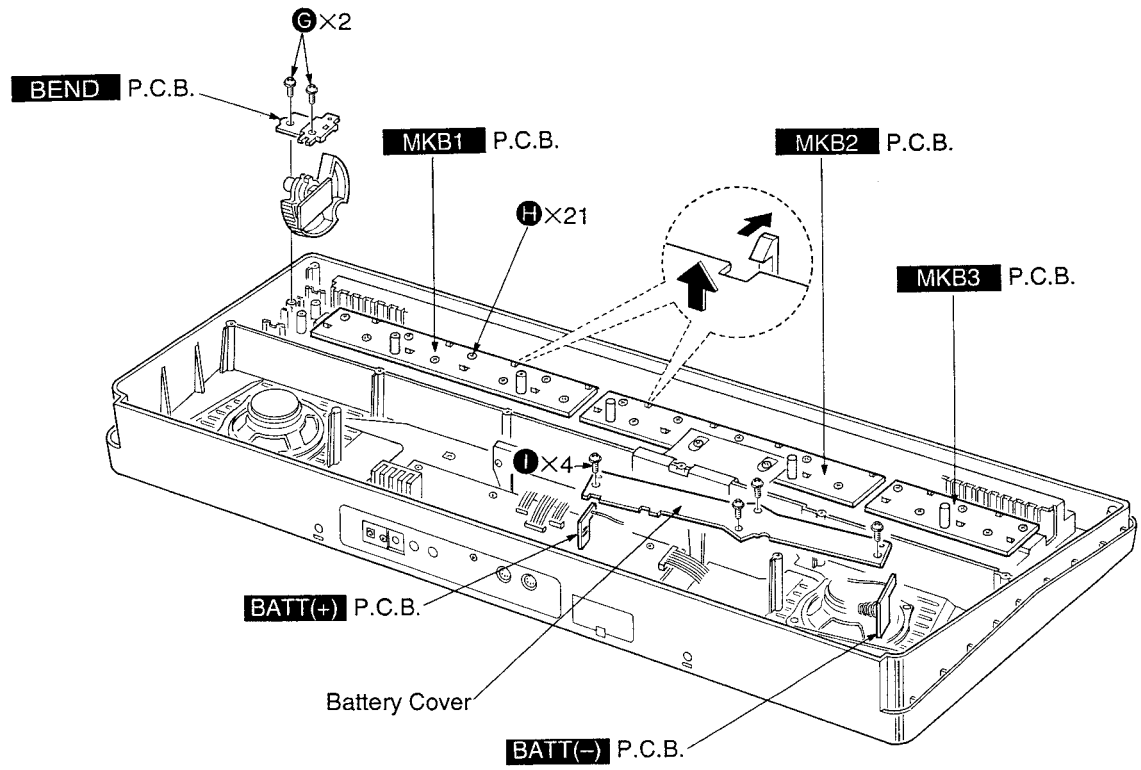
1. Remove the BEND P.C.B. Ass'y mounting screws (G 2 pcs.).

MKB1, 2, 3 P.C.B.

1. Remove the MKB 1, 2, 3 P.C.B. mounting screws (H 21 pcs.).

BATT(+), BATT(-) P.C.B.

1. Remove the battery cover mounting screws (I 4 pcs.).
2. Pull out the BATT (+) P.C.B. and BATT (-) P.C.B. from the cabinet.



[Fig. 3]

SYMPTOMS WHICH APPEAR TO BE SIGNS OF TROUBLE

The following changes in performance may occur in Keyboard but do not indicate trouble.

	Phenomenon	Remedy
Sounds and effects	The buttons, keys, etc. malfunction.	• Turn off the **PLAY** button once, then turn it on again. If this procedure is not successful, turn off the **PLAY** button once. Then, while pressing the leftmost C and E keys on the keyboard, turn the **PLAY** button on again. (Note that, in this case, all programmable settings, functions and memories return to their factory-preset status.) • If you cannot turn off the **PLAY** button, disconnect the AC adaptor or remove the batteries once.
	No sound is produced when the keys are pressed.	• The **MAIN VOLUME** is at the minimum setting. Adjust the volume with the **MAIN VOLUME** buttons. • The local control is set to [oFF]. Set the local control to [on].
	You hear sound effects when you attempt to select a different sound or rhythm on the number pad.	• The **SOUND EFFECT** button is on. Press it to turn it off.
	When using batteries, the volume level become low, the sound is distorted, or the buttons and keys do not function.	• The batteries are low. Replace the batteries as soon as possible.
	Only percussive instrument sounds are produced when the keyboard is played.	• A **DRUM SET** sound (number **129**) has been selected. On the **SOUND/RHYTHM SELECT** number pad, select a different sound number.
Rhythm	No sound is produced for the rhythm.	• On the **SOUND/RHYTHM SELECT** number pad, **COMPOSER** (**099** or **100**) was selected although a rhythm pattern has not been stored. Select a different rhythm or store a rhythm pattern in the **COMPOSER**
	The rhythm does not start.	• The tempo has been set to a number lower than 048, and the mode has changed to the external CLOCK mode. Set the tempo to 048 or higher. • The **GM MODE SET** setting has been set to GM. Set the mode to Standard.
SEQUENCER/ COMPOSER	Storage is not possible.	• The remaining memory capacity is 0. • When recording in the **SEQUENCER** by overdubbing, you can repeat the recording procedure a maximum of 5 times. If you wish to continue recording, a portion of the recorded contents must first be erased.
Other	Noise from this instrument can be heard in a nearby radio or TV set.	• This sometimes occurs when electrical equipment such as a radio or TV is used near the instrument. Try moving such electrical equipment further away from the instrument.
	Radio or TV noise can be heard in this instrument.	• The sound may be coming from a nearby broadcast station or amateur radio station. If the sound is bothersome, consult your dealer or service center.
	The cabinet becomes warm during use.	• This instrument has a built-in amplifier section that heats the cabinet to some degree. This is not an indication of trouble.

MIDI IMPLEMENTATION CHART

Keyboard [SX-KZ450/KN500] **(Technics mode)**

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1-16	
	Changed	1-16		
Mode	Default	×	Mode 3	
	Messages	×	×	
	Altered	******	******	
Note Number		○	0-127	
	True voice	******	0-127	
Velocity	Note ON	○	○	
	Note OFF	9n00	×	
After Touch	Key's	×	×	
	Ch's	×	○	
Pitch Bender		○	○*	*Except Channel 10-14
Control Change	1	×	○	Modulation *3)
	6	×	○	Data entry
	7	○	○	Volume
	10	×	○	Panpot *3)
	11	×	○	Expression
	64	○	○	Hold *3)
	91	×	×	Chorus
	93	×	×	Effect Depth
	100,101	×	○	RPN LSB, MSB *4) *3)
	120	×	○	All sound off
	121	×	○	Reset all controllers
Prog Change		○	○	Except 10-14ch
	True #	******	0-127	
System exclusive		○	○	
System common	Song Pos	******	******	
	Song Sel	******	******	
	Tune	******	******	
System Real Time	Clock	○ *1)	○ *2)	
	Commands	Start,Stop	Start,Stop *5)	
Aux Messages	Local ON/ OFF	******	******	
	All notes OFF	******	○	
	Active Sense	○	○	
	Reset	******	******	
Notes		1) When the RHYTHM is running 2) When it is SYNC.RECORDING through MIDI. 3) Except 10-14ch.	4) RPN #0=Pitch Bender Sensitivity 5) Sync mode are push START Switch	

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO ○:Yes

Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO ×:No

Keyboard [SX-KZ450/KN500] **(General MIDI mode)**

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1-16	
	Changed	1-16		
Mode	Default	×	Mode 3	
	Messages	×	×	
	Altered	******	******	
Note Number		○	0-127	
	True voice	******	0-127	
Velocity	Note ON	0-127	○	
	Note OFF	9n00	×	
After Touch	Key's	×	×	
	Ch's	×	○	
Pitch Bender		○	○*	Except Channel 10
Control Change	1	×	○	Modulation *1)
	6	×	○	Data entry
	7	○	○	Volume
	10	×	○	Panpot *1)
	11	×	○	Expression
	64	×	○	Hold *1)
	91	×	×	Chorus
	93	×	×	Effect Depth
	100,101	×	○	RPN LSB, MSB *1) *2)
	120	×	○	All sound off
	121	×	○	Reset all controllers
Prog Change		○	○	Except 10
	True #	******	0-127	
System exclusive		○	○	
System common	Song Pos	******	******	
	Song Sel	******	******	
	Tune	******	******	
System Real Time	Clock	******	******	
	Commands	******	******	
Aux Messages	Local ON/ OFF	******	******	
	All notes OFF	******	○	
	Active Sense	○	○	
	Reset	******	******	
Notes		1) Except 10ch.	2) RPN - #0=Pitch Bender Sensitivity #1=Master Fine Tuning #2=Master Coarse Tuning. Values are given by Data Entry	

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO ○:Yes

Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO ×:No

PRECAUTION BEFORE SERVICING

■ Precautions for measuring of the output waveforms.

1. The waveform was measured with a "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may differ somewhat due to the difference in the timming of triggering.
2. Since the 1/10 test probe is used, the indicated voltage value on the bottom part of each waveform photo is 1/10 of the actual value (e.g. 0.2 V/cm should be 2.0 V/cm).

■ Important safety notice:

Components identified by a ⚠ mark have special characteristics impotant for safety.
When replacing any of these components, use only manufacture's specified parts.

■ Symbolic Marks

The symbolic marks for resistors and capacitors which used in this circuits are classified as following TABLE-1 and TABLE-2.

1. RESISTORS
   - Resistors without symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
   - All resistors are 1/4 WATT, ±5 % TOLERANCE unless otherwise designated in schematic diagrams.

(TABLE-1)

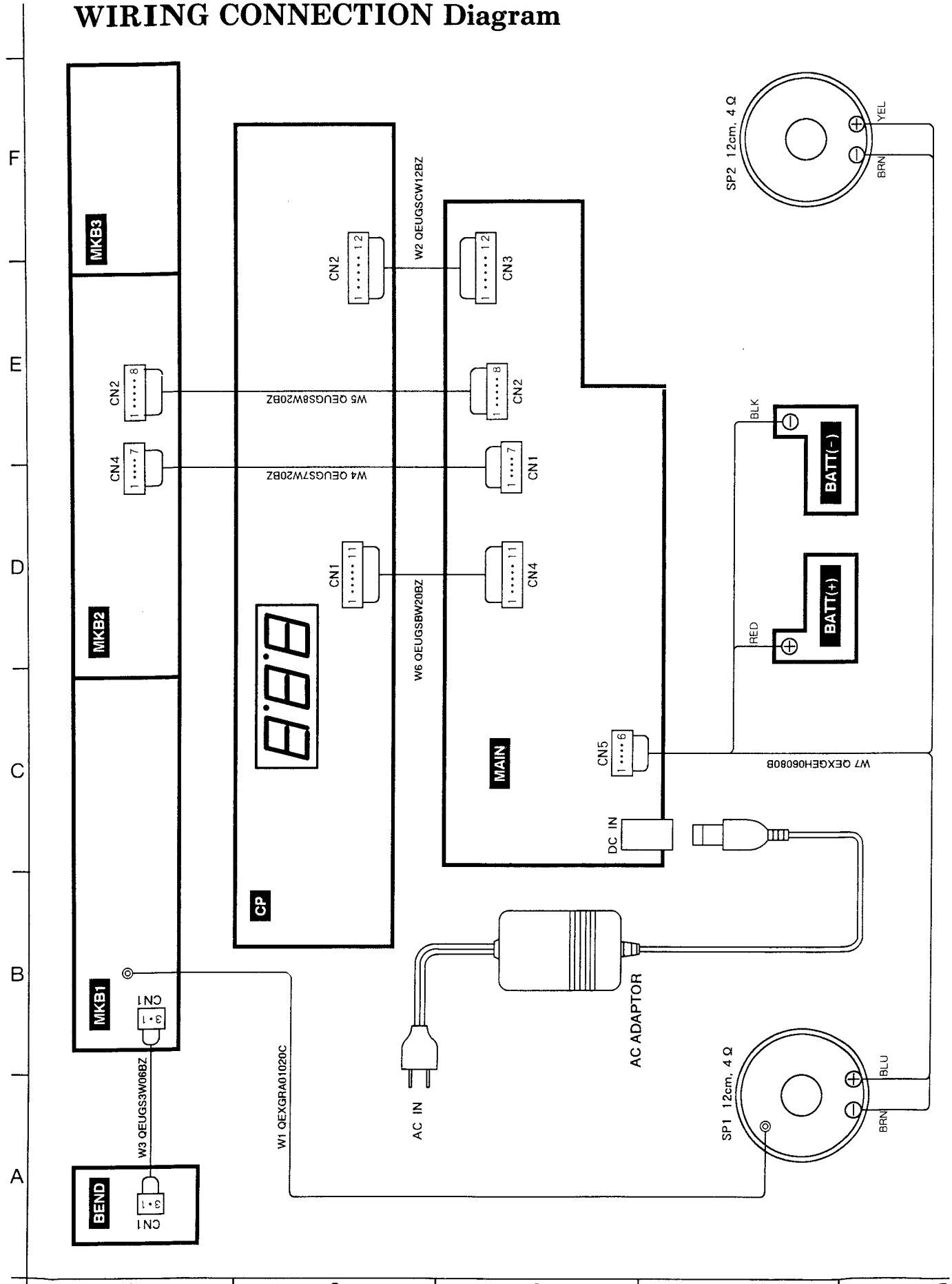
SYMBOL	SPECIFICATION	SYMBOL	SPECIFICATION
Ⓕ	Fixed Carbon Film Resistors " FLAME-PROOF " (ERD—F—type)	Ⓕ	Fixed Metal Film Resistors " FLAME-PROOF " (ERX—type)
Ⓕ	Fixed Wire Wound Resistors " FLAME-PROOF " (ERD—F—type)	[F]	Fuse Type Fixed Metal Oxide File Resistors " FLAME-PROOF " (ERQ—type)
Ⓕ	Fixed Metal Oxide Film Resistors " FLAME-PROOF " (ERG—type)	[F]	Fuse Type Fixed Carbon File Resistors " FLAME-PROOF " (ERD2FC—type)
Ⓖ	Fixed Metal Film Resistors (Precaution and High Stability) (ERO—type)		

2. CAPACITORS
   - Capacitors without symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10 % Tolerance)
   - Polarized capacitors without symbolic mark are Aluminum Electrolytic Capapcitors. (ECEA-type, ±20 % Toletance)

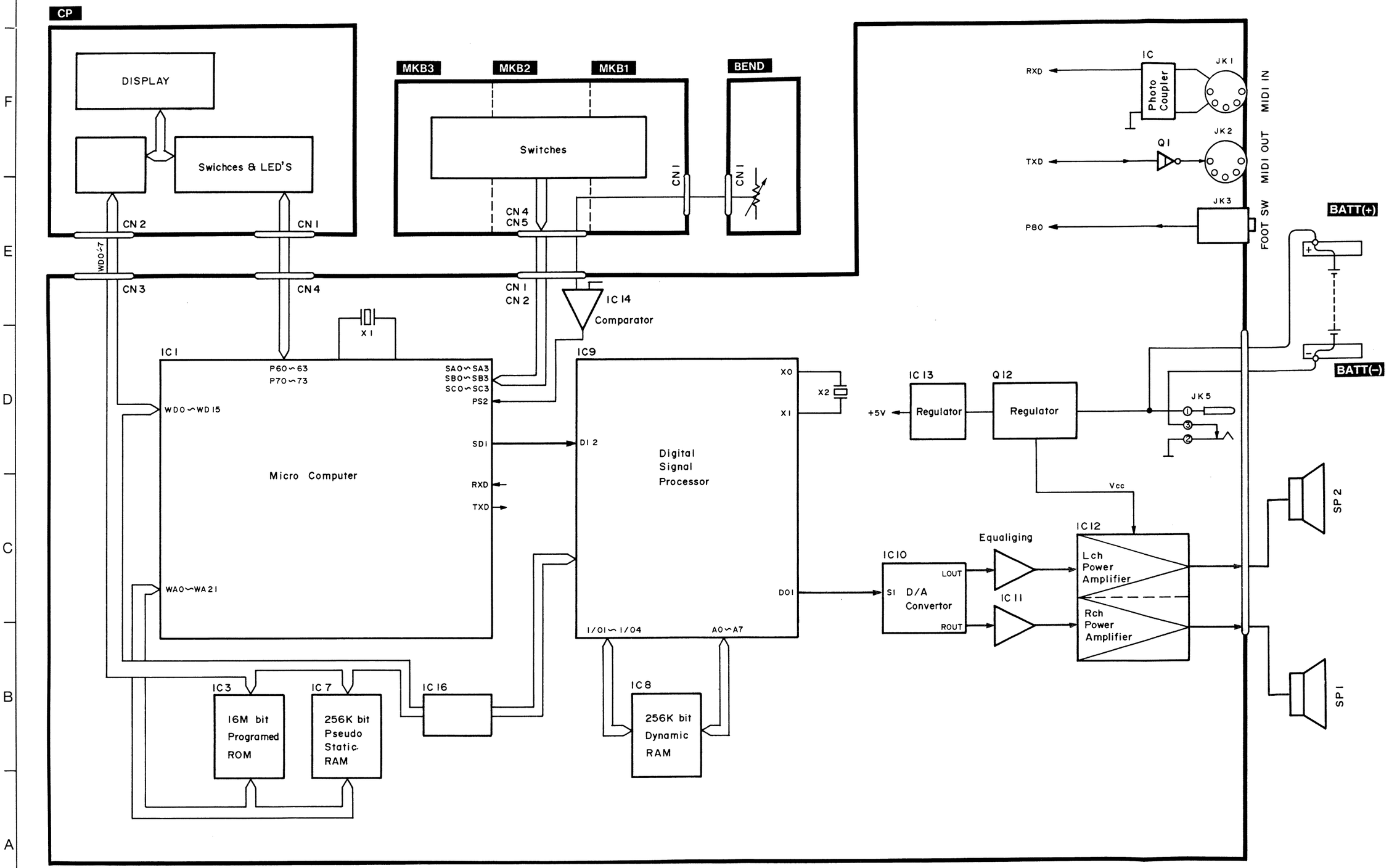
(TABLE-2)

SYMBOL	SPECIFICATION	TYPE
Ⓝ	Non-Polarized Electrolytic Capacitors	ECEA_KN_type
Ⓨ	Non-Polarized Electrolytic (for Network System)	ECEA_Y_type
Ⓣ	Tantalum Solid Electrolytic Capacitors	ECS_type
ⓉⒻ	Metalized Plastic Film Capacitors (TF Series)	ECQV_type
○	Temperature Compensanting Ceramic Capacitors	ECC_type
	High-Dielectric Constant Ceramic Capacitors	ECK_type ECR_type
	Axial Lead Ceramic Capacitors	ECB_type
	Metalized Polyester Film Capacitors for Across the Line	ECQ_EW_type
	Aluminum Electrolytic Capacitors for Smoothing Circuit	ECES_type
	Multilayer Ceramic Chip Capacitors	ECUV_type

WIRING CONNECTION Diagram



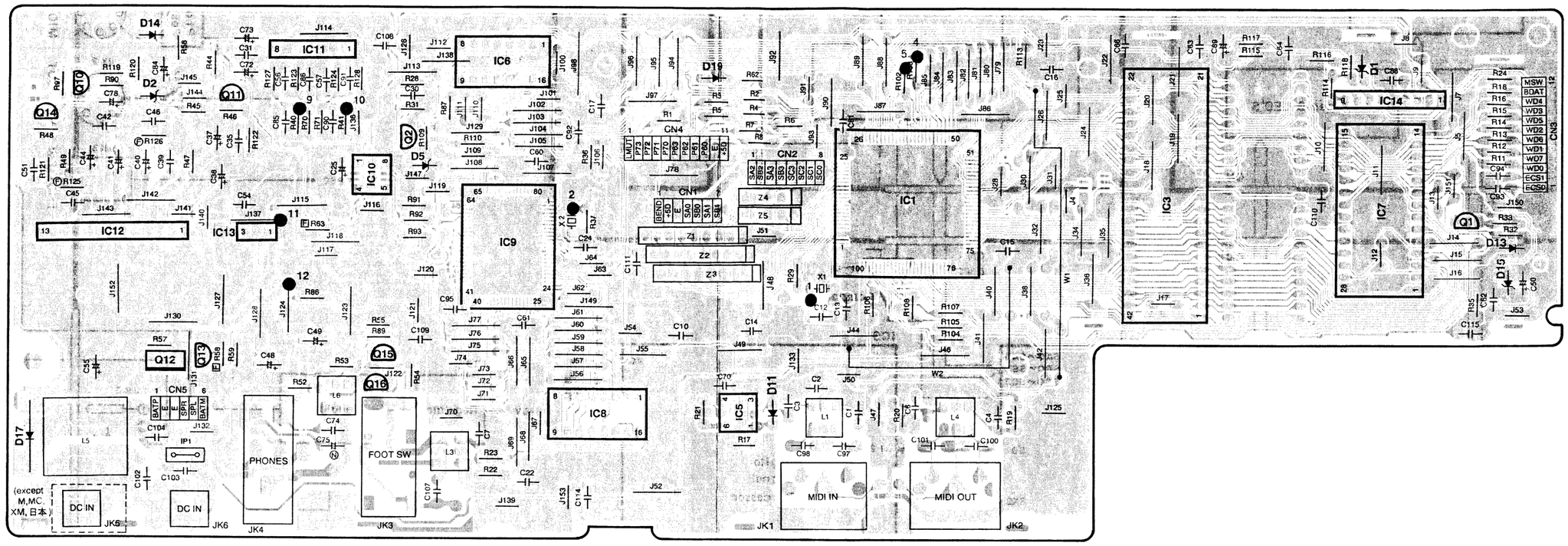
BLOCK Diagram



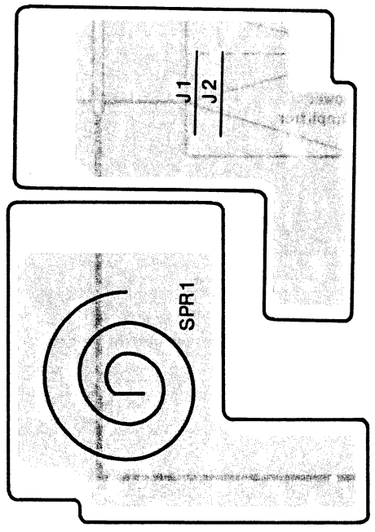
MAIN/BATT P.C. Board

MAIN

Others (SXPG219211A)
M MC XM 日本 (SXPG219231A)



BATT+, − (SXPG220121B)



MAIN

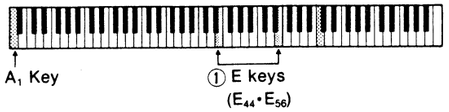
NOTES:

- IC'S
  - IC3: QSIG03C160E6
  - IC5: SVIGTLP513
  - IC6: HD74HC174P
  - IC7: M5256BP70LL
  - IC8: MN41464A-08
  - IC9: D6382GF-3B9
  - IC10: D6379GR-E1
  - IC11: SVIGM5218L
  - IC12: LA4508
  - IC13: UPC24M05HF
  - IC14: AN6913
- TRANSISTORS
  - Q1, 2, 11, 14~16: 2SC1815GR
  - Q10: 2SA1015-GR
  - Q12: 2SA1643
  - Q13: 2SC3940ARS
- DIODES
  - D1: MA4036H
  - D2: MA4022
  - D5, 15: MA4051
  - D11, 13, 14, 19: MA165
  - D17: RK34LF

Measuring Condition ■波形の測定条件

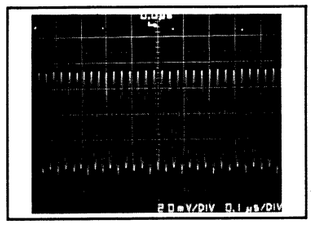
Check Point ❸~❽
Set to the self-diagnostic mode followings.
- While pressing two E keys (①) simultaneously, turn on the power switch.

次のように自己診断モードに設定してください。
- 2つのEキー(①)を同時に押しながら、電源スイッチをオンする。
- SOUND ..... No. 074 FLUTE
- Main Volume ..... Center
- Keyboard ..... A_1 (②)

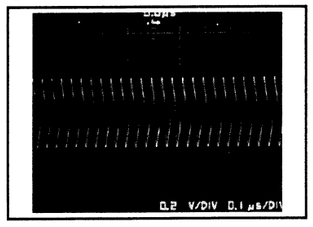


Check Point ❶
Set the initial setting mode (Refer to Page Ⅰ-6)
イニシャルセッティングを行ってください。(Ⅰ-3 ページ参照)
- SOUND ..... No. 074 FLUTE
- Main Volume ..... Center

❶



❷



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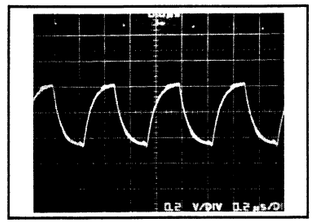

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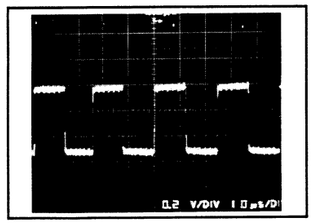
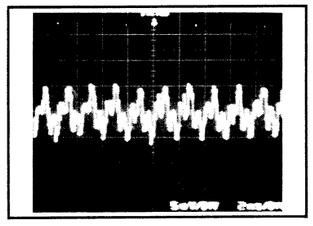
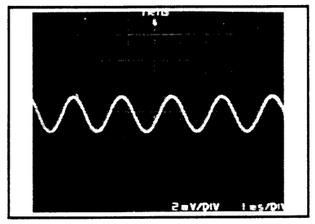


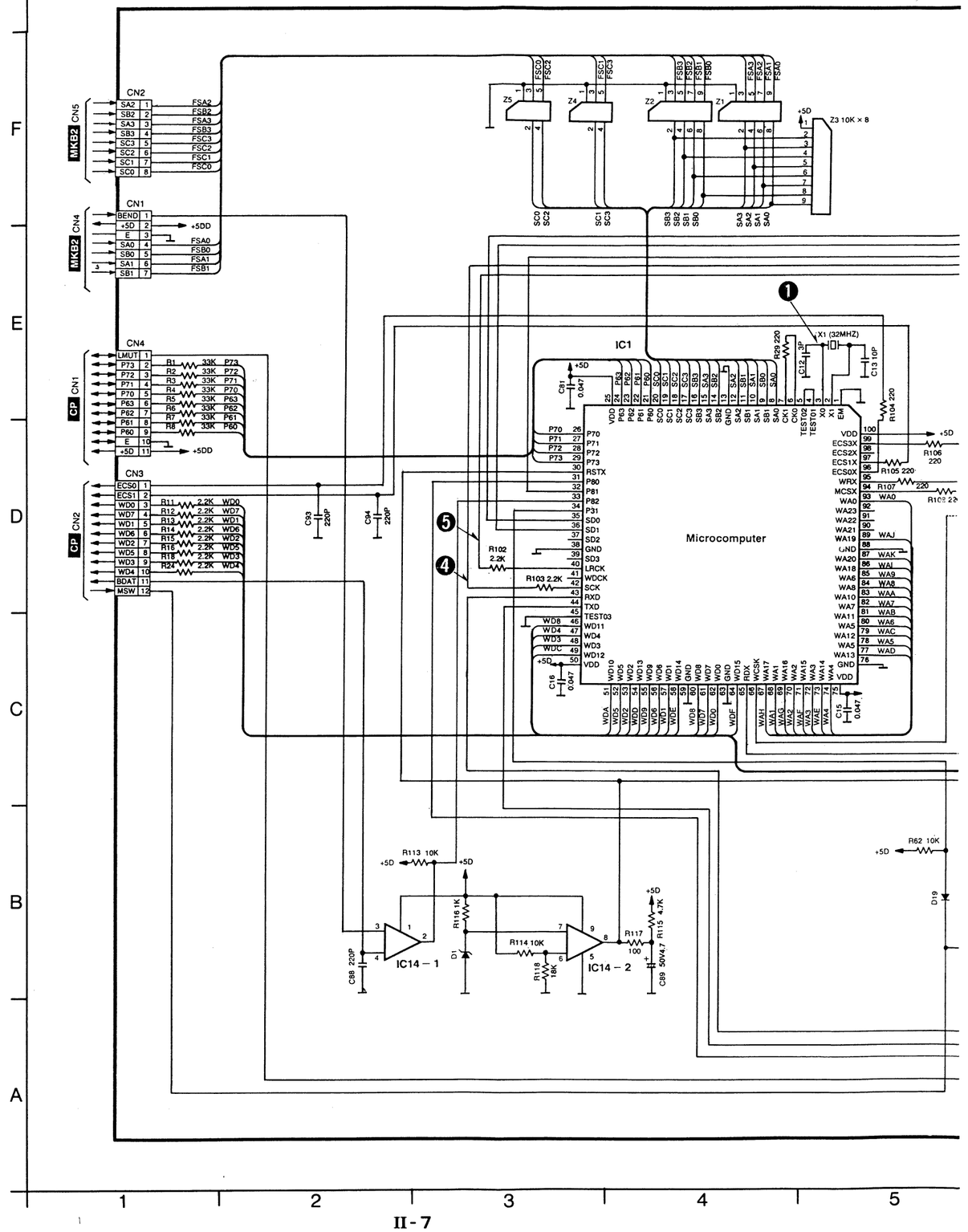
❾, ❿

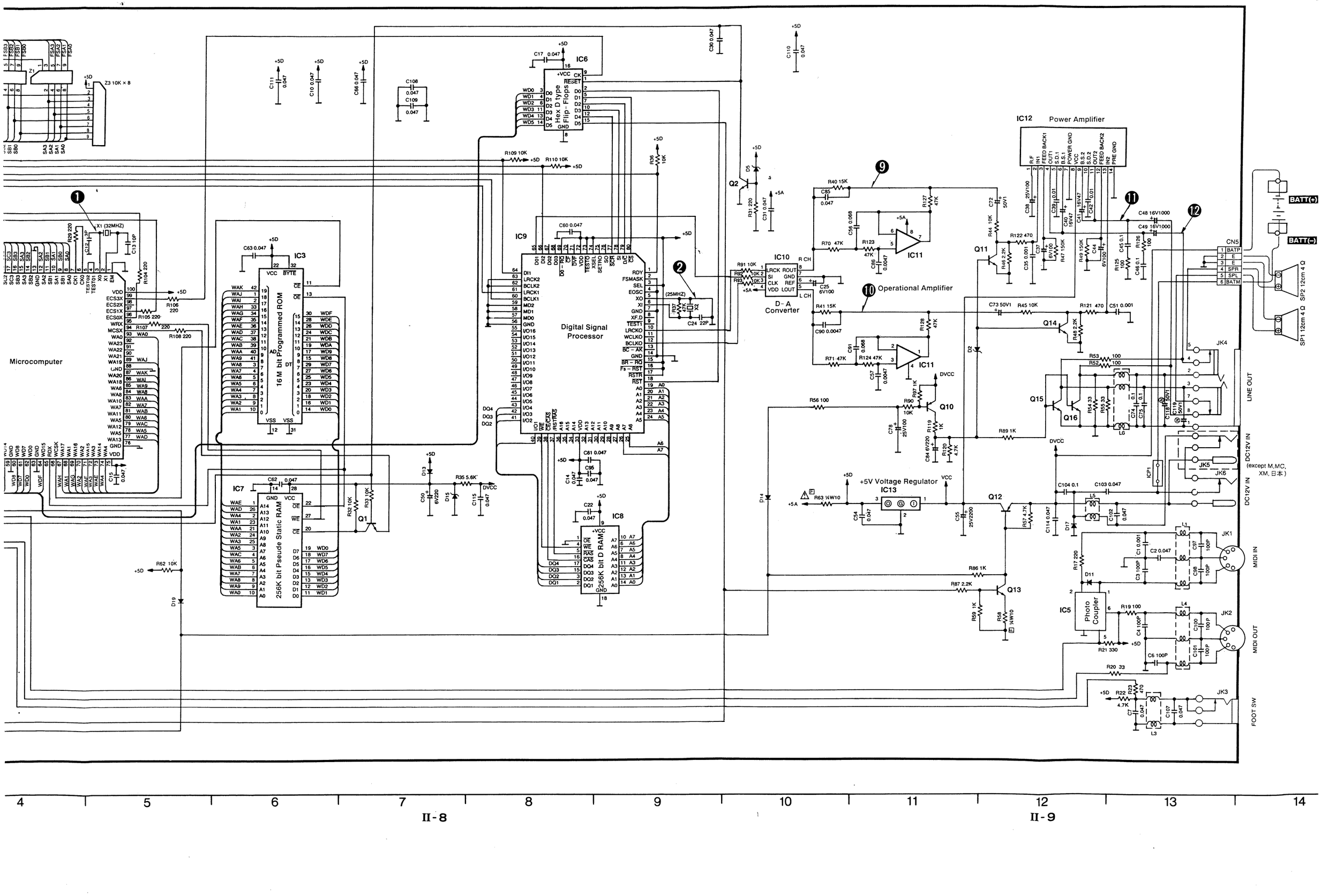


⓫, ⓬



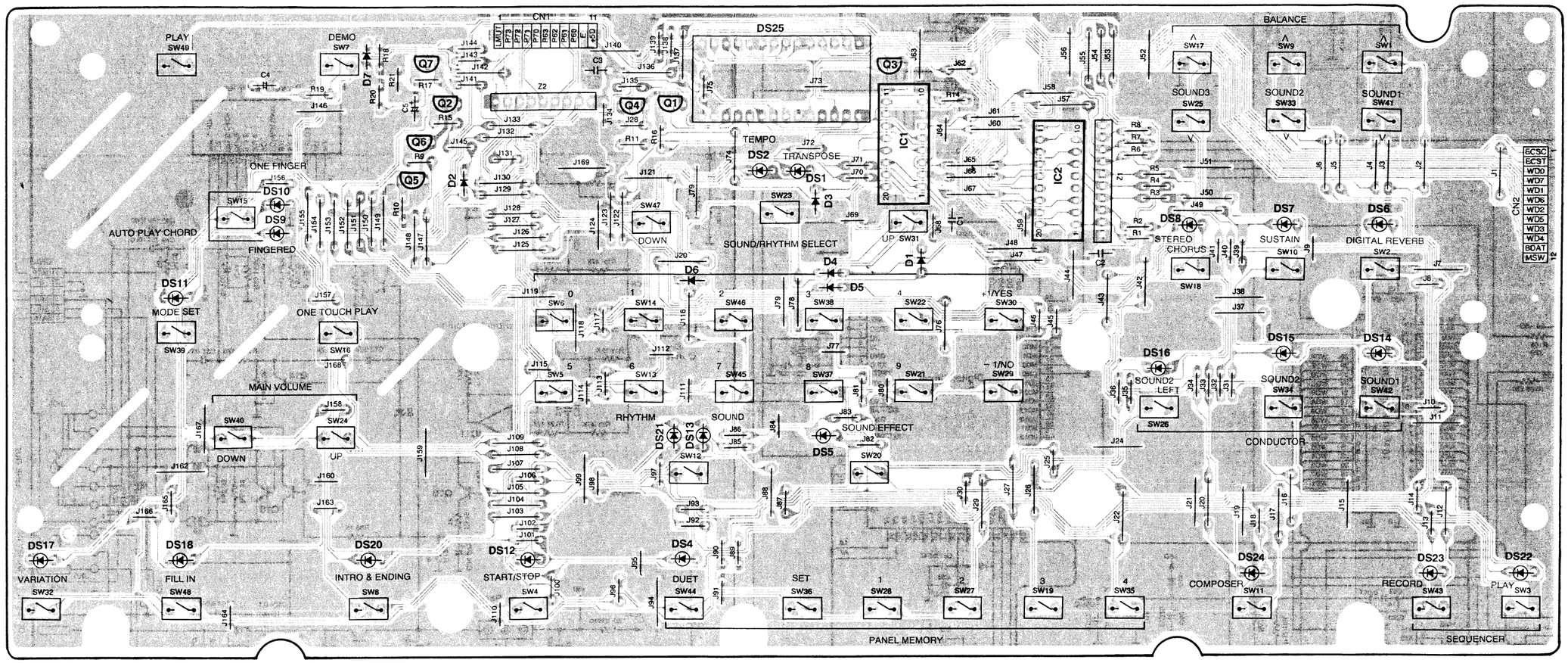
MAIN/BATT P.C. Diagram




Microcomputer
Digital Signal Processor
16 M bit Programmed ROM
256K bit Pseude Static RAM
256K bit D RAM
D-A Converter
Power Amplifier
Operational Amplifier
+5V Voltage Regulator
Photo Coupler
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
Q1
Q2
Q10
Q11
Q12
Q13
Q14
Q15
Q16
X1 (32MHZ)
X2 (25MHZ)
Z1
Z3 10K × 8
CN5
BATT(+)
BATT(-)
SP2 12cm 4Ω
SP1 12cm 4Ω
LINE OUT
DC12V IN
(except M,MC, XM, 日本)
MIDI IN
MIDI OUT
FOOT SW
JK1
JK2
JK3
JK4
JK5
JK6
ICP1
DVCC
+5D
+5A
+5V
VCC
9
10
11
12
13
14
4
5
6
7
8
II-8
II-9

CP

CP (SXPG220211)

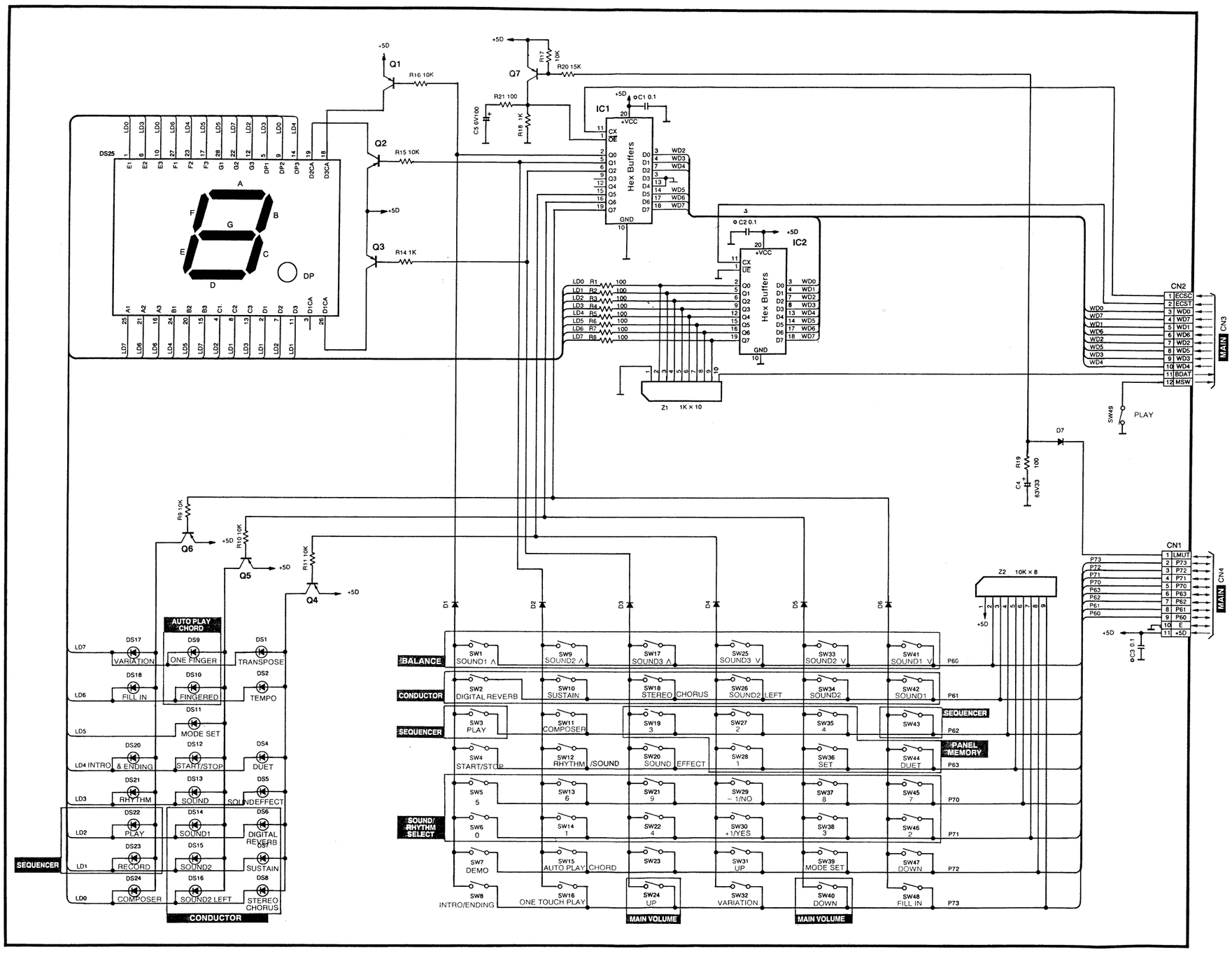


CP

NOTES:

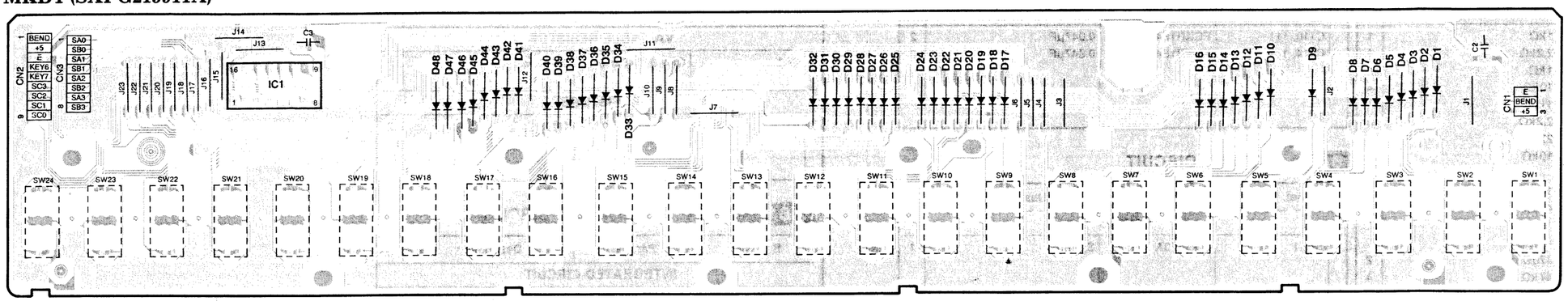
- IC'S
  - IC1, 2: HD74HC374P
- TRANSISTORS
  - Q1~7: 2SA830SB
- DIODES
  - D1~7: MA165
  - DS1, 2, 4~9, 10, 12~18, 20, 21: SEL4117RM
  - D11, 22~24: SEL4417GM

CP P.C. Diagram

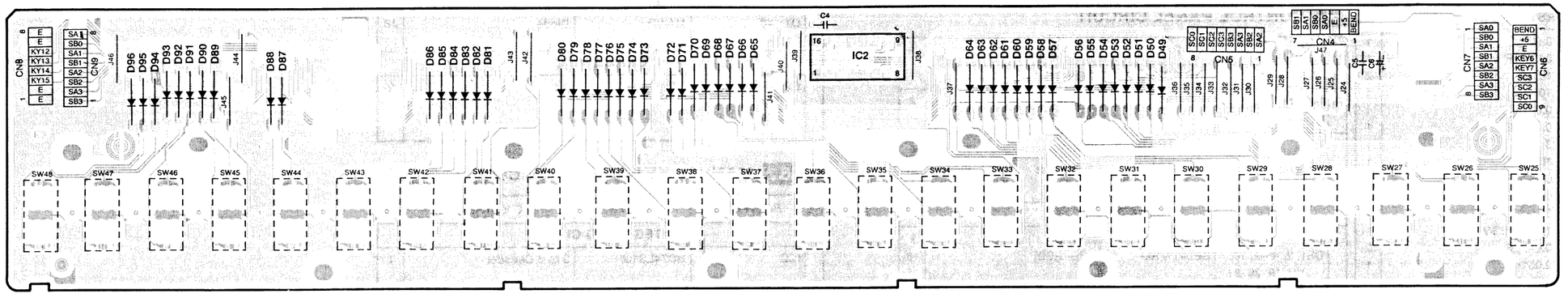


MKB1/MKB2/MKB3/BEND

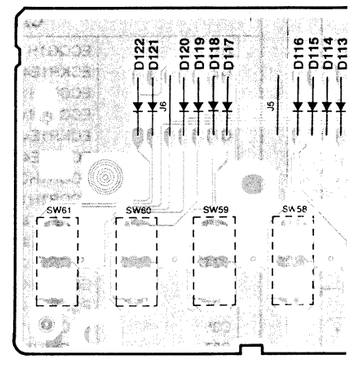
MKB1 (SXPG219911A)

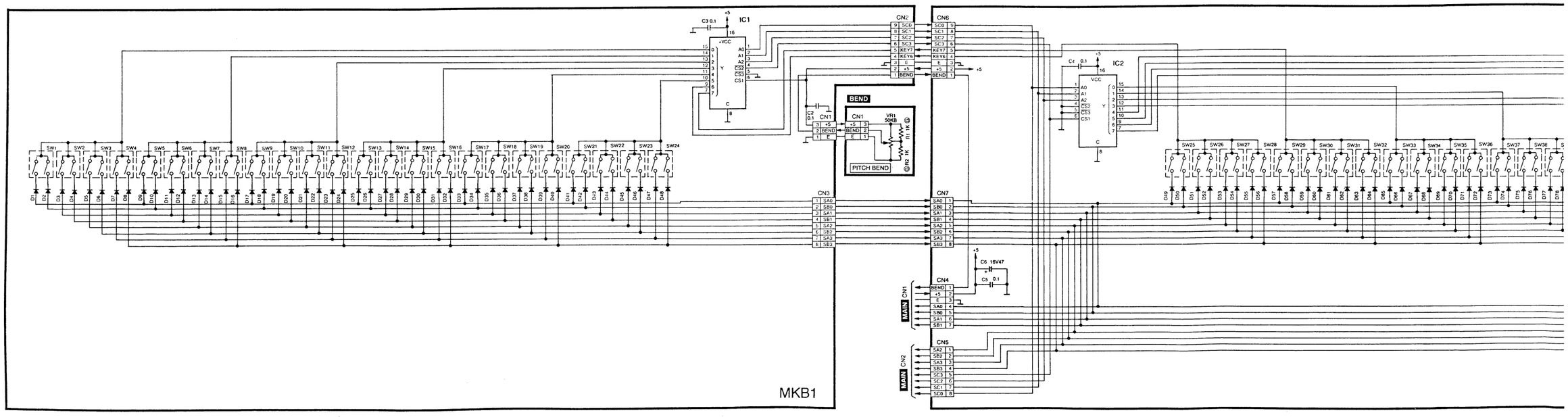


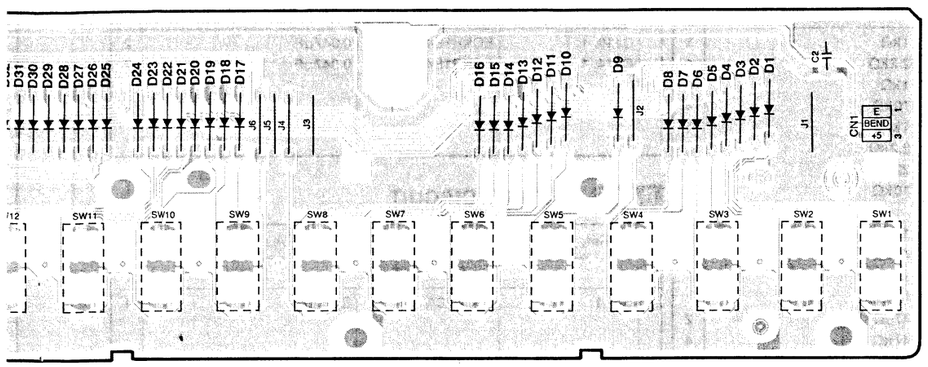
MKB2 (SXPG219911B)

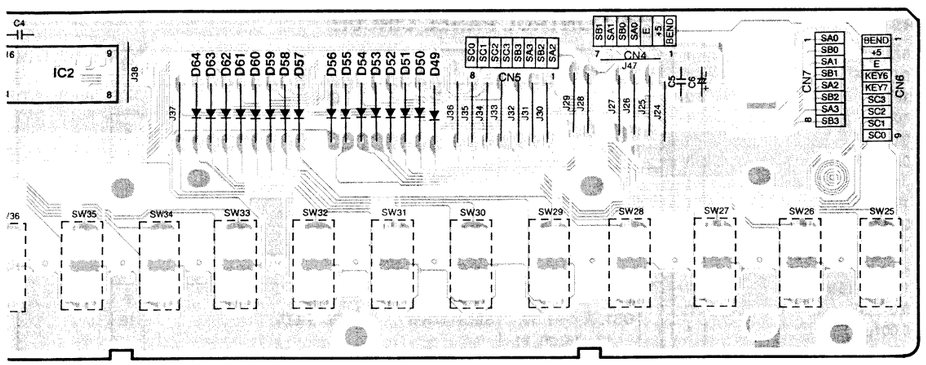


MKB3 (SXPG220011)

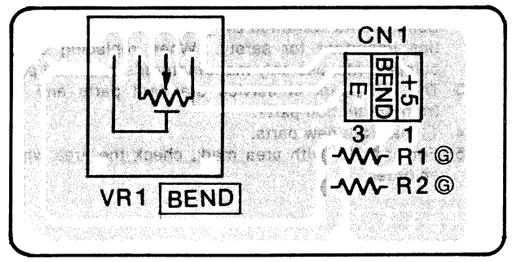




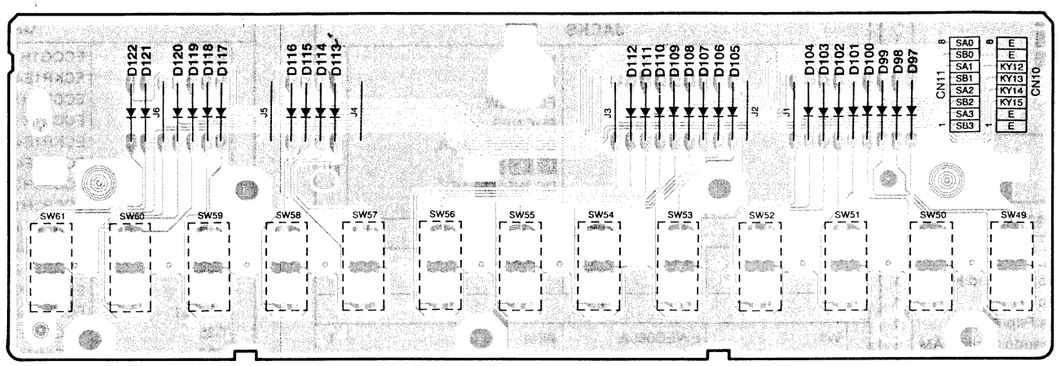



C4
IC2
D64 D63 D62 D61 D60 D59 D58 D57 D56 D55 D54 D53 D52 D51 D50 D49
J38 J37 J36 J35 J34 J33 J32 J31 J30 J29 J28 J27 J26 J25 J24
CN5 SC0 SC1 SC2 SC3 SK3 SA3 SB2 SA2
CN4 SB1 SA1 SB0 SA0 E +5 BEND
C3 C2
CN7 SA0 SB0 SA1 SB1 SA2 SB2 SA3 SB3
CN8 BEND +5 E KEY5 KEY7 SC3 SC2 SC1 SC0
SW36 SW35 SW34 SW33 SW32 SW31 SW30 SW29 SW28 SW27 SW26 SW25

BEND (SXPG220111A)



MKB3 (SXPG220011)



MKB1

NOTES:

- IC
  IC1: HD74LS138P
- DIODES
  D1~48: MA165
- CAPACITORS
  C2, 3: ECRF1H104ZF

MKB2

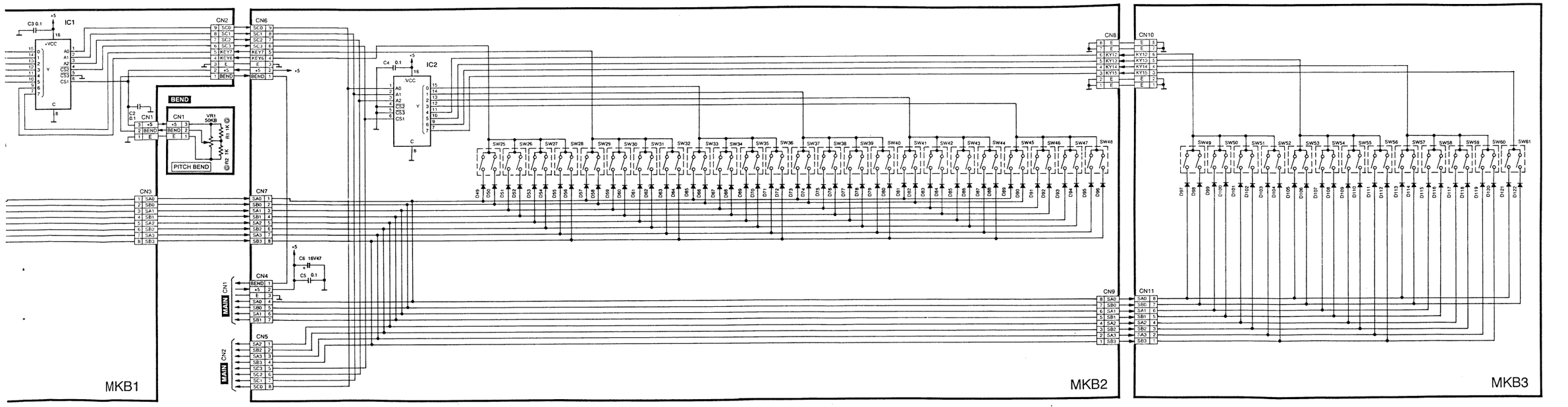
NOTES:

- IC
  IC2: HD74LS138P
- DIODES
  D49~96: MA165
- CAPACITORS
  C3, 4: ECRF1H104ZF

MKB3

NOTES:

- DIODES
  D97~122: MA165



REPLACEMENT PARTS LIST.....P.C.B. and Wiring Parts

Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retension period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ PRINTED CIRCUIT BOARD

	RTL	Area	Part No.	Description	P/S
○	RTL	Others	SXPG219211A	MAIN	1
○	RTL	M MC XM	SXPG219231A	MAIN	1
○	RTL		SXPG220111B	BATT	1
○	RTL		SXPG220211	CP	1
○	RTL		SXPG220111A	BEND	1
○	RTL		SXPG219911A	MKB1	1
○	RTL		SXPG219911B	MKB2	1
○	RTL		SXPG220011	MKB3	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
○	IC3	QSIG03C160E6	16M bit Programmed ROM	1
	IC5	SVIGTLP513	Photo Coupler	1
○	IC6	HD74HC174P	Hex D-Type Flip-Flops	1
○	IC7	M5256BP70LL	256K bit Pseudo Static RAM	1
○	IC8	MN41464A-08	256K bit D RAM	1
	IC9	D6382GF-3B9	Digital Signal Processor	1
○	IC10	D6379GR-E1	D-A CONVERTER	1
S	IC11	SVIGM5218L	Operational Amplifier	1
○	IC12	LA4508	Power Amplifier	1
○	IC13	UPC24M05HF	+5V Voltage Regulator	1
	IC14	AN6913	Comparator	1
	TRANSISTORS			
S	Q1, 2, 11, 14~16	2SC1815GR	Transistor	6
S	Q10	2SA1015-GR	2SA933STRS (SUB. Part)	1
	Q12 ⚠	2SA1643	Transistor	1
	Q13	2SC3940ARS	Transistor	1
	DIODES			
	D1	MA4036H	Zener, 3.7V	1
○	D2	MA4022	Zener, 2.2V	1
	D5, 15	MA4051	Zener, 5.1V	2
	D11, 13, 14, 19	MA165	Diode	4
	D17	RK34LF	Diode	1
	OSCILLATORS			
○	X1	QSXG2F3200A	32MHz, Ceramic Oscillator	1
	X2	QSXG2F2500A	25MHz Ceramic Oscillator	1
	COMPONENT COMBINATIONS			
○	Z1, 2	RC9L471J101K	RC NETWORK	2
	Z3	EXBPI8103JM	10kΩ×8	1
○	Z4, 5	RC5L331J101K	RC Network	2

	Ref. No.	Part No.	Description	P/S
	COILS			
	L1, 4, 6	QLQGT3T150SA	Coil	3
	L3	QLQGT2T150SA	Coil	1
	L5 ⚠	SLQG10W2D1	Coil	1
	JACKS			
	JK1	SJSG1370A	MIDI IN	1
	JK2	SJSG1370A	MIDI OUT	1
	JK3	QJJG003AA	FOOT SW	1
	JK4	SJJG100A	PHONES	1
	JK5	SJJG440A	DC INPUT JACK, M MC XM	1
	JK6	QJSG006AA	DC INPUT JACK	1
	IC PROTECTOR			
	ICP1 ⚠	ICP-N75T104	IC Protecter	1
	WIRE			
	W1	SWEG660A	Wire	1
	RESISTORS			
	R1~8	ERDS2TJ333	33kΩ	8
	R11~16	ERDS2TJ222	2.2kΩ	6
	R17	ERDS2TJ221	220Ω	1
	R18	ERDS2TJ222	2.2kΩ	1
	R19	ERDS2TJ101	100Ω	1
	R20	ERDS2TJ221	220Ω	1
	R21	ERDS2TJ331	330Ω	1
	R22	ERDS2TJ472	4.7kΩ	1
	R23	ERDS2TJ471	470Ω	1
	R24	ERDS2TJ222	2.2kΩ	1
	R28	ERDS2TJ102	1kΩ	1
	R29	ERDS2TJ471	470Ω	1
	R31	ERDS2TJ221	220Ω	1
	R32	ERDS2TJ103	10kΩ	1
	R33	ERDS2TJ472	4.7kΩ	1
	R35	ERDS2TJ562	5.6kΩ	1
	R36	ERDS2TJ103	10kΩ	1
	R37	ERDS2TJ473	47kΩ	1
	R40, 41	ERDS2TJ153	15kΩ	2
	R44, 45	ERDS2TJ103	10kΩ	2
	R46, 48	ERDS2TJ222	2.2kΩ	2
	R47, 49	ERDS2TJ154	150kΩ	2
	R52, 53	ERDS2TJ101	100Ω	2
	R54, 55	ERDS2TJ330	33Ω	2
	R56	ERDS2TJ101	100Ω	1
	R57	ERDS2TJ472	4.7kΩ	1
	R58 ⚠	ERD14FJ100	10Ω, 1/4W, Flame-Proof	1
	R59	ERDS2TJ102	1kΩ	1
	R62	ERDS2TJ103	10kΩ	1
	R63 ⚠	ERD2FCVG100	10Ω, 1/4W, Fuse Type	1
	R70, 71	ERDS2TJ473	47kΩ	2

Ref. No.	Part No.	Description	P/S
R86	ERDS2TJ102	1kΩ	1
R87	ERDS2TJ222	2.2kΩ	1
R89	ERDS2TJ102	1kΩ	1
R90~93	ERDS2TJ103	10kΩ	4
R97	ERDS2TJ102	1kΩ	1
R102, 103	ERDS2TJ222	2.2kΩ	2
R104~108	ERDS2TJ221	220Ω	5
R109, 110, 113~116	ERDS2TJ103	10kΩ	6
R117	ERDS2TJ101	100Ω	1
R118	ERDS2TJ473	47kΩ	1
R119	ERDS2TJ102	1kΩ	1
R120	ERDS2TJ472	4.7kΩ	1
R121, 122	ERDS2TJ471	470Ω	2
R123, 124, 127, 128	ERDS2TJ473	47kΩ	4
R125, 126 ⚠	ERD25FVJ2R2	2.2Ω, 1/4W, Flame-Ploof	2
CAPACITORS			
C1	ECQG1H102KZ	0.001μF	1
C2	ECKR1E473ZV	0.047μF	1
C3, 4	ECCR1H101J	100pF	2
C6	ECCR1H101J	100pF	1
C7	ECKR1E473ZV	0.047μF	1
C10	ECKR1E473ZV	0.047μF	1
C12	ECCR1H030C	3pF	1
C13	ECCR1H100D	10pF	1
C14~17	ECKR1E473ZV	0.047μF	4
C22	ECKR1E473ZV	0.047μF	1
C24	ECCR1H220J	22pF	1
C25	ECEA0JKA101	100μF, 6.3V	1
C30, 31	ECKR1E473ZV	0.047μF	2
C35	ECQG1H102KZ	0.001μF	1
C37	ECEA0JKA101	100μF, 6.3V	1
C38	ECEA1EU101	100μF, 25V	1
C39	ECQB1H103JF	0.01μF	1
C40, 41	ECEA1CKA470	47μF, 16V	2
C42	ECQB1H103JF	0.01μF	1
C44	ECEA0JKA101	100μF, 6.3V	1
C45, 46	ECRF1H104ZF	0.1μF	2
C48, 49	ECEA1CU102	1000μF, 16V	2
C50	ECEA0JKA221	220μF, 6.3V	1
C51	ECQG1H102KZ	0.001μF	1
C54	ECKR1E473ZV	0.047μF	1
C55	ECEA1EU222	2200μF, 25V	1
C56	ECQB1H683JF	0.068μF	1
C57	ECQG1H472KZ	0.0047μF	1
C60~64	ECKR1E473ZV	0.047μF	5
C66	ECKR1E473ZV	0.047μF	1
C70	ECKR1E473ZV	0.047μF	1
C72, 73	ECEA1HKA010	1μF, 50V	2
C74, 75	ECEA1HKN010	1μF, 50V	2
C78	ECEA1EU101	100μF, 25V	1
C81	ECKR1E473ZV	0.047μF	1
C84	ECEA0JKA221	220μF, 6.3V	1
C85, 86	ECQG1H472KZ	0.0047μF	2
C88	ECCR1H221J	220pF	1
C89	ECEA1CKA470	47μF, 16V	1
C90	ECQG1H472KZ	0.0047μF	1
C91	ECQB1H683JF	0.068μF	1
C92~94	ECCR1H221J	220pF	3
C95	ECKR1E473ZV	0.047μF	1
C97, 98	ECCR1H101J	100pF	2
C100, 101	ECCR1H101J	100pF	2
C102, 103	ECKR1E473ZV	0.047μF	2
C104	ECRF1H104ZF	0.1μF	1
C107, 108, 109	ECKR1E473ZV	0.047μF	3

Ref. No.	Part No.	Description	P/S
C110, 111	ECKR1E473ZV	0.047μF	2
C114, 115	ECKR1E473ZV	0.047μF	2

BATT BATTERY CIRCUIT

Ref. No.	Part No.	Description	P/S
SPRING			
SPR1	SJCG20A	Spring	1

CP CONTROL PANEL CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
○	IC1, 2	HD74HC374P	Hex Buffers	2
	TRANSISTORS			
	Q1~7	2SA830SB	Transistor	7
	DIODES			
	D1~7	MA165	Diode	7
	DS1, 2, 4~9, 10, 12~18, 20, 21	SEL4117RM	LED (RED)	18
	D11, 22~24	SEL4417GM	LED (GREEN)	4
	LCD DISPLAY			
	DS25	LB603VF	Triple 8 Segments Display	1
	COMPONENT COMBINATIONS			
○	Z1	EXBLD8102G	1kΩ×10	1
	Z2	EXBPI8103JM	10kΩ×8	1
	SWITCHES			
	S1~49	EVQ21507K	Push Switch	49
	RESISTORS			
	R1~8	ERDS2TJ101	100Ω	8
	R9~11	ERDS2TJ103	10kΩ	3
	R14~17	ERDS2TJ103	10kΩ	4
	R18	ERDS2TJ102	1kΩ	1
	R19	ERDS2TJ101	100Ω	1
	R20	ERDS2TJ153	15kΩ	1
	R21	ERDS2TJ101	100Ω	1
	CAPACITORS			
	C1~3	ECRF1H104ZF	0.1μF	3
	C4	ECEA0JKA330	33μF, 6.3V	1
	C5	ECEA0JKA101	100μF, 6.3V	1

Ref. No.	Part No.	Description	P/S
R86	ERDS2TJ102	1kΩ	1
R87	ERDS2TJ222	2.2kΩ	1
R89	ERDS2TJ102	1kΩ	1
R90~93	ERDS2TJ103	10kΩ	4
R97	ERDS2TJ102	1kΩ	1
R102, 103	ERDS2TJ222	2.2kΩ	2
R104~108	ERDS2TJ221	220Ω	5
R109, 110, 113~116	ERDS2TJ103	10kΩ	6
R117	ERDS2TJ101	100Ω	1
R118	ERDS2TJ473	47kΩ	1
R119	ERDS2TJ102	1kΩ	1
R120	ERDS2TJ472	4.7kΩ	1
R121, 122	ERDS2TJ471	470Ω	2
R123, 124, 127, 128	ERDS2TJ473	47kΩ	4
R125, 126 ⚠	ERD25FVJ2R2	2.2Ω, 1/4W, Flame-Ploof	2
CAPACITORS			
C1	ECQG1H102KZ	0.001μF	1
C2	ECKR1E473ZV	0.047μF	1
C3, 4	ECCR1H101J	100pF	2
C6	ECCR1H101J	100pF	1
C7	ECKR1E473ZV	0.047μF	1
C10	ECKR1E473ZV	0.047μF	1
C12	ECCR1H030C	3pF	1
C13	ECCR1H100D	10pF	1
C14~17	ECKR1E473ZV	0.047μF	4
C22	ECKR1E473ZV	0.047μF	1
C24	ECCR1H220J	22pF	1
C25	ECEA0JKA101	100μF, 6.3V	1
C30, 31	ECKR1E473ZV	0.047μF	2
C35	ECQG1H102KZ	0.001μF	1
C37	ECEA0JKA101	100μF, 6.3V	1
C38	ECEA1EU101	100μF, 25V	1
C39	ECQB1H103JF	0.01μF	1
C40, 41	ECEA1CKA470	47μF, 16V	2
C42	ECQB1H103JF	0.01μF	1
C44	ECEA0JKA101	100μF, 6.3V	1
C45, 46	ECRF1H104ZF	0.1μF	2
C48, 49	ECEA1CU102	1000μF, 16V	2
C50	ECEA0JKA221	220μF, 6.3V	1
C51	ECQG1H102KZ	0.001μF	1
C54	ECKR1E473ZV	0.047μF	1
C55	ECEA1EU222	2200μF, 25V	1
C56	ECQB1H683JF	0.068μF	1
C57	ECQG1H472KZ	0.0047μF	1
C60~64	ECKR1E473ZV	0.047μF	5
C66	ECKR1E473ZV	0.047μF	1
C70	ECKR1E473ZV	0.047μF	1
C72, 73	ECEA1HKA010	1μF, 50V	2
C74, 75	ECEA1HKN010	1μF, 50V	2
C78	ECEA1EU101	100μF, 25V	1
C81	ECKR1E473ZV	0.047μF	1
C84	ECEA0JKA221	220μF, 6.3V	1
C85, 86	ECQG1H472KZ	0.0047μF	2
C88	ECCR1H221J	220pF	1
C89	ECEA1CKA470	47μF, 16V	1
C90	ECQG1H472KZ	0.0047μF	1
C91	ECQB1H683JF	0.068μF	1
C92~94	ECCR1H221J	220pF	3
C95	ECKR1E473ZV	0.047μF	1
C97, 98	ECCR1H101J	100pF	2
C100, 101	ECCR1H101J	100pF	2
C102, 103	ECKR1E473ZV	0.047μF	2
C104	ECRF1H104ZF	0.1μF	1
C107, 108, 109	ECKR1E473ZV	0.047μF	3
C110, 111	ECKR1E473ZV	0.047μF	2
C114, 115	ECKR1E473ZV	0.047μF	2

BATT BATTERY CIRCUIT

Ref. No.	Part No.	Description	P/S
SPRING			
SPR1	SJCG20A	Spring	1

CP CONTROL PANEL CIRCUIT

Ref. No.	Part No.	Description	P/S
INTEGRATED CIRCUITS			
○ IC1, 2	HD74HC374P	Hex Buffers	2
TRANSISTORS			
Q1~7	2SA830SB	Transistor	7
DIODES			
D1~7	MA165	Diode	7
DS1, 2, 4~9, 10, 12~18, 20, 21	SEL4117RM	LED (RED)	18
D11, 22~24	SEL4417GM	LED (GREEN)	4
LCD DISPLAY			
DS25	LB603VF	Triple 8 Segments Display	1
COMPONENT COMBINATIONS			
○ Z1	EXBLD8102G	1kΩ×10	1
Z2	EXBPI8103JM	10kΩ×8	1
SWITCHES			
S1~49	EVQ21507K	Push Switch	49
RESISTORS			
R1~8	ERDS2TJ101	100Ω	8
R9~11	ERDS2TJ103	10kΩ	3
R14~17	ERDS2TJ103	10kΩ	4
R18	ERDS2TJ102	1kΩ	1
R19	ERDS2TJ101	100Ω	1
R20	ERDS2TJ153	15kΩ	1
R21	ERDS2TJ101	100Ω	1
CAPACITORS			
C1~3	ECRF1H104ZF	0.1μF	3
C4	ECEA0JKA330	33μF, 6.3V	1
C5	ECEA0JKA101	100μF, 6.3V	1

BEND PITCH BEND CIRCUIT

Ref. No.	Part No.	Description	P/S
VARIABLE RESISTOR			
VR1	QRVG16A02B54	50kΩ, B	1
RESISTORS			
R1, 2	ER0S2CKF1001	1kΩ, ±1%	2

MKB1 MANUAL KEYBOARD 1 CIRCUIT

Ref. No.	Part No.	Description	P/S
INTEGRATED CIRCUIT			
IC1	HD74LS138P	3 to 8 Decoder	1
DIODES			
D1~48	MA165	Diode	48
CAPACITORS			
C2, 3	ECRF1H104ZF	0.1μF	2

MKB2 MANUAL KEYBOARD 2 CIRCUIT

Ref. No.	Part No.	Description	P/S
INTEGRATED CIRCUIT			
IC2	HD74LS138P	3 to 8 Decoder	1
DIODES			
D49~96	MA165	Diode	48
CAPACITORS			
C3, 4	ECRF1H104ZF	0.1μF	2

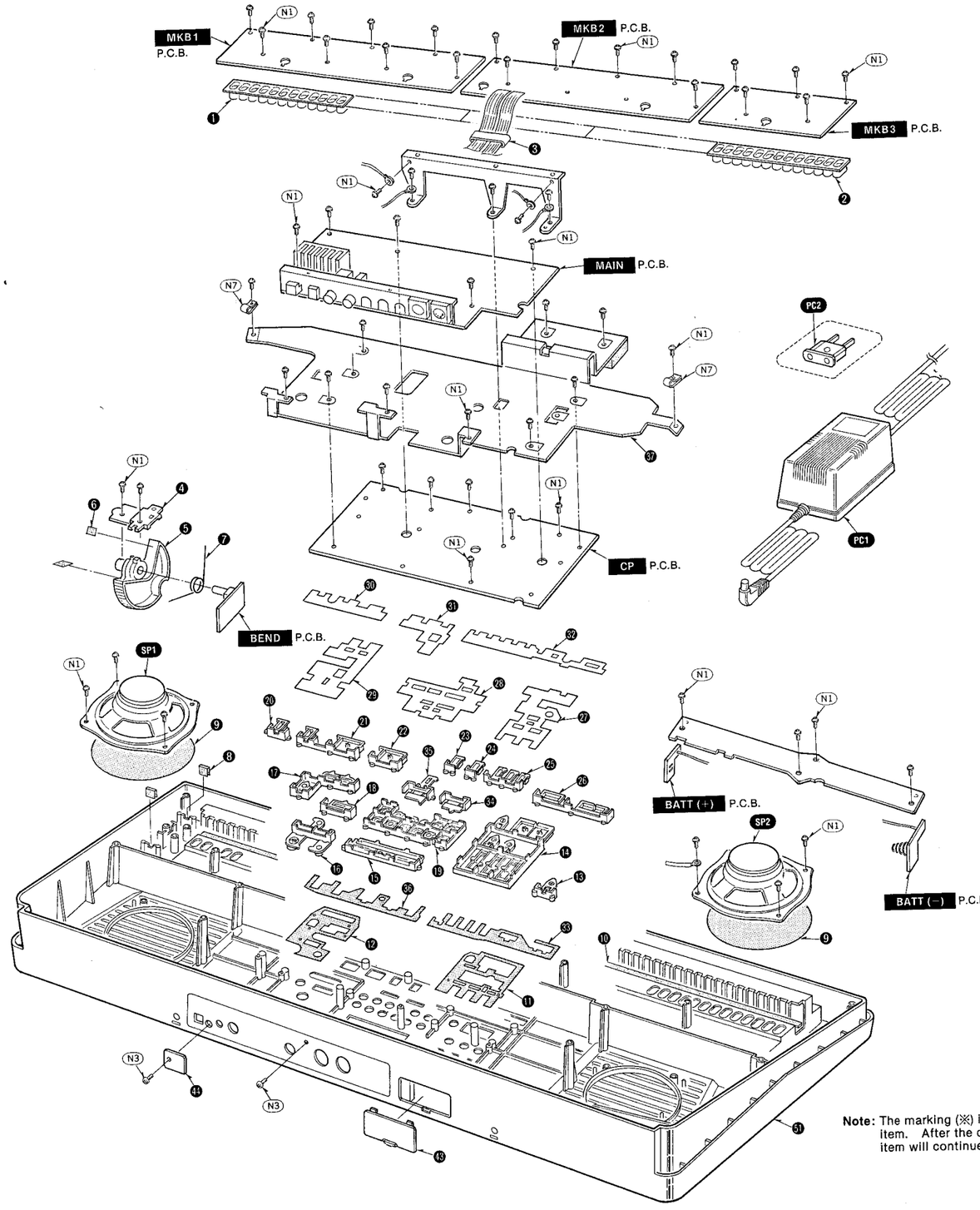
MKB3 MANUAL KEYBOARD 3 CIRCUIT

Ref. No.	Part No.	Description	P/S
DIODES			
D97~122	MA165	Diode	26

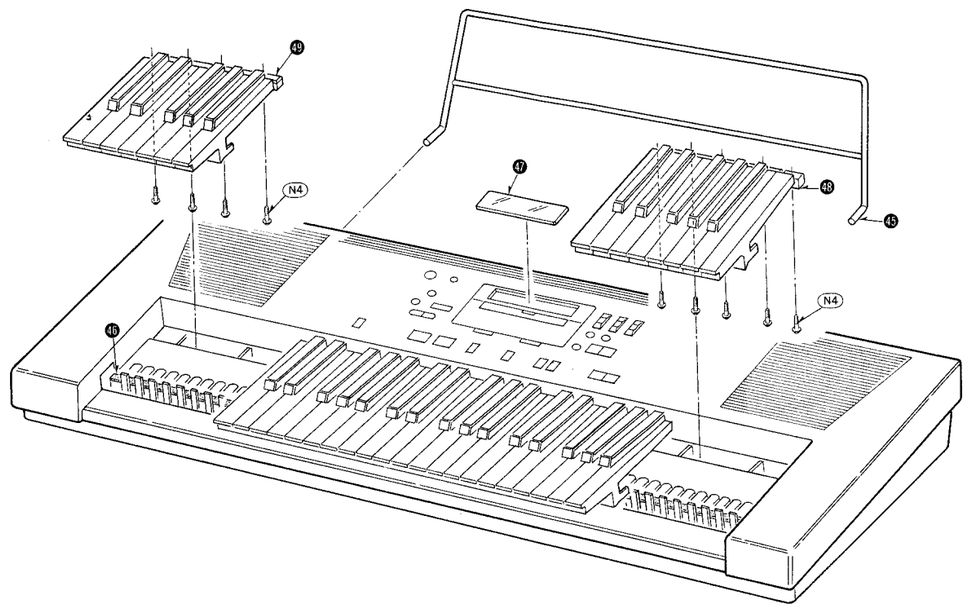
■ WIRING PARTS

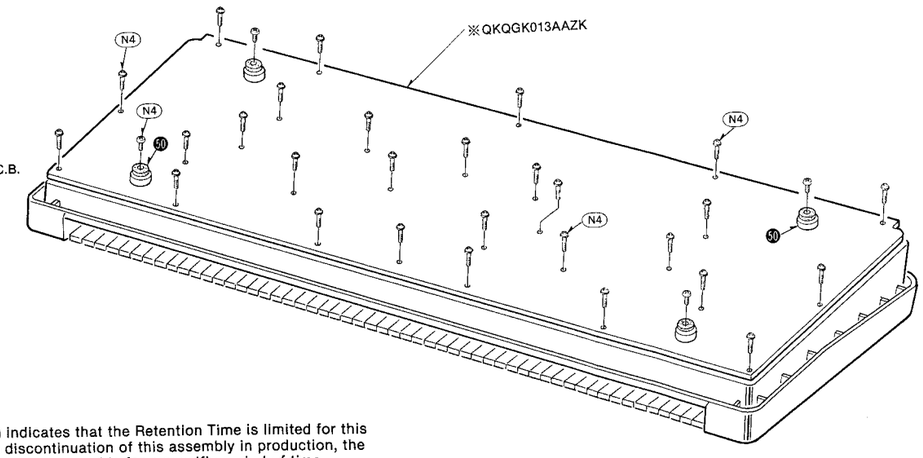
Ref. No.	Part No.	Description	P/S
○ W1	QEXGRA1020C	Connector with Wire	1
○ W2	QEUGSCW12BZ	Connector with Wire	1
○ W3	QEUGS3W06BZ	Connector with Wire	1
○ W4	QEUGS7W20BZ	Connector with Wire	1
○ W5	QEUGS8W20BZ	Connector with Wire	1
○ W6	QEUGSBW20BZ	Connector with Wire	1
○ W7	QEXGEH06080B	Connector with Wire	1

CABINET PARTS LOCATION



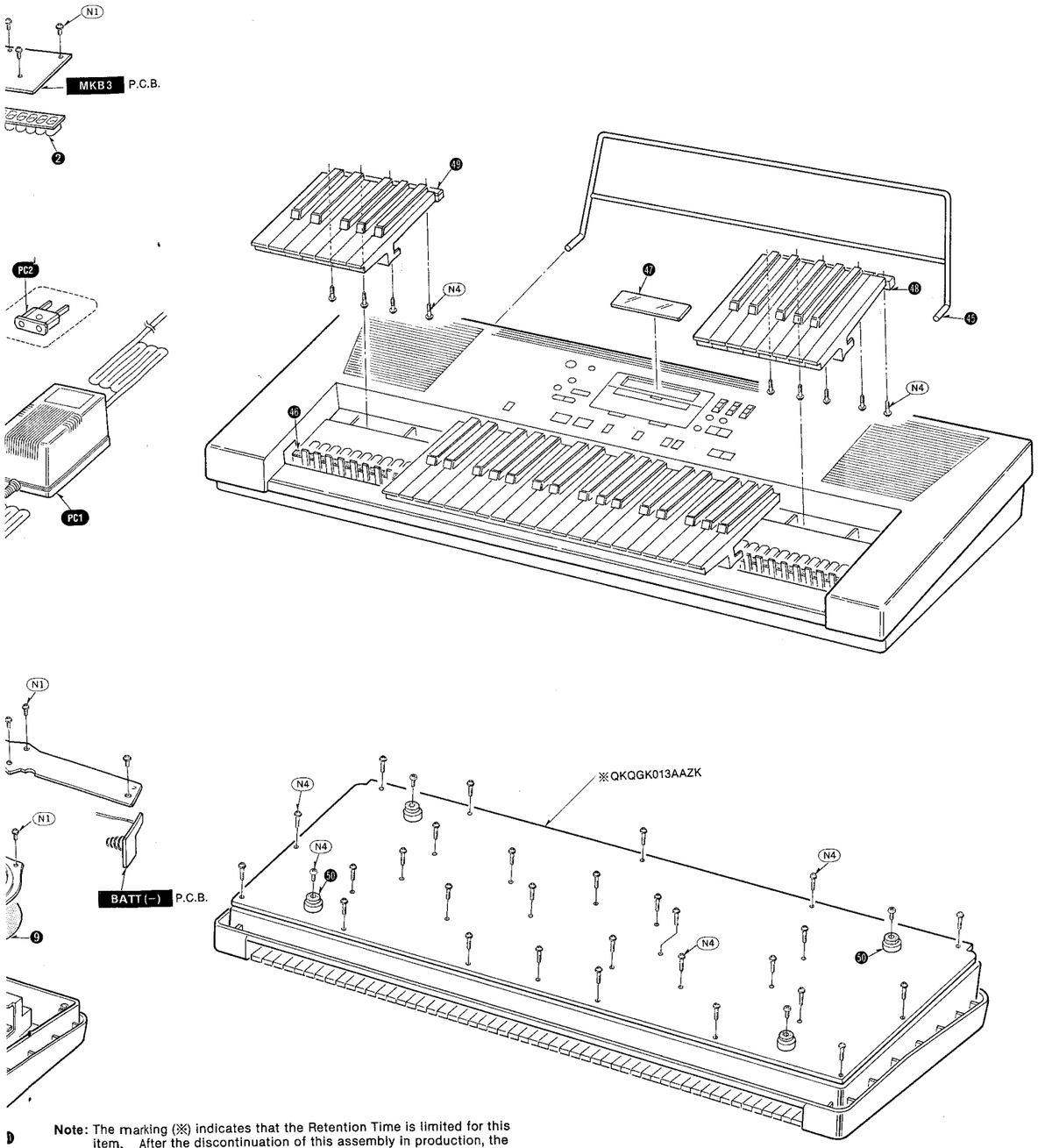
III-4





III-5

Note: The marking (※) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time.



Note: The marking (※) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time.

REPLACEMENT PARTS LIST.....Cabinet and Chassis Parts

Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retension period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. ○ mark are new parts.
3. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
4. For part No. with area mark, check the area when placing an order.
5. The raw material indication for synthtic resin
   In order to facilitate classification of parts of synthetic resin manufacture and to promote the recycling of natural resources, a raw material symbol for such parts is indicated in the Ref. No./Material column.

SX-KN500 CABINET & CHASSIS PARTS

	Ref. No.		Part No.	Description	P/S
		SPEAKERS			
		SP1, 2	EAS12P458A3	Speaker, 12cm 4Ω	2
		CABINET PARTS			
○		1	QMWG6015BAK	Rubber Switch	4
○		2	QMWG6014BAK	Rubber Switch	1
○		3	QLZG010A	Core	1
○		4	QMNG0031AAK	Bend Stopper	1
		5	SBNG4050A	Wheel Knob	1
○		6	QMFG4076AAK	Felt	2
		7	SUSG570A	Spring	1
○		8	QMFG4136AAK	Felt	2
		10	SHSG1970A	Felt	1
○		11	QMRG5072AAK	Felt	1
○		12	QMRG5071AAK	Felt	1
○		13	QGUG1295AA01	Button	1
○		14	QGUG1284AA	Button	1
○		15	QGUG1286AA	Button	1
○		16	QGUG1289AA	Button	1
○		17	QGUG1285AA	Button	1
○		18	QGUG1296AA	Button	1
○		19	QGUG1283AA	Button	1
○		20	QGUG1293AA01	Button	1
○		21	QGUG1297AA	Button	1
○		22	QGUG1294AA	Button	1
○		23	QGUG1291AA	Button	1
○		24	QGUG1291AB	Button	1
○		25	QGUG1288AA	Button	1
○		26	QGUG1287AA01	Button	1
○		27	QMFG4130AAK	Felt	1
○		28	QMFG4133AAK	Felt	1
○		29	QMFG4129AAK	Felt	1
○		30	QMFG4142AAK	Felt	1
○		31	QMFG4131AAK	Felt	1
○		32	QMFG4132AAK	Felt	1
		33	QMRG5070AAK	Felt	1
○		34	QGUG1292AA	Button	1
○		35	QGUG1290AA	Button	1
○		36	QMRG5069AAK	Felt	1
○		37	QSCG073AK	Shield	1
○		43	QKSGF014AAK	Battery Cover	1
		44	QKSGF007AA	DC IN Cover	1
○		45	QGAG3003AAK	Music Rack	1
○		46	QMFG1141AA	Felt	1
○		47	QKWG017AAK	Display Panel	1
○		48 [ABS]	QMWG9021AAK	13 Keys	1
○		49 [ABS]	QMWG9020AAK	12 Keys	4
○		50	SHRG2160AK	Foot	4
○		51 [PS]	QYPG1044AAK	Control Panel	1
○		9	⟨ QMFG4128AAK	Speaker Net	2

SX-KZ450 CABINET & CHASSIS PARTS

	Ref. No.		Part No.	Description	P/S
		SPEAKERS			
		SP1, 2	EAS12P458A3	Speaker, 12cm 4Ω	2
		POWER CORD & PLUG			
		PC1 ⚠	QFAG014AA	AC Adaptor, [M] [MC] [XM]	1
		PC2 ⚠	SJP5213-1	Attachment Plug, [X] [XT]	1
		CABINET PARTS			
○		1	QMWG6015AAK	Rubber Switch	4
○		2	QMWG6014AAK	Rubber Switch	1
○		3	QLZG010A	Core	1
○		4	QMNG0031AAK	Bend Stopper	1
		5	SBNG4050A	Wheel Knob	1
○		6	QMFG4076AAK	Felt	2
		7	SUSG570A	Spring	1
○		8	QMFG4136AAK	Felt	2
		10	SHSG1970A	Felt	1
○		11	QMRG5072AAK	Felt	1
○		12	QMRG5071AAK	Felt	1
○		13	QGUG1295AA01	Botton	1
○		14	QGUG1284AA	Botton	1
○		15	QGUG1286AA	Botton	1
○		16	QGUG1289AA	Botton	1
○		17	QGUG1285AA	Botton	1
○		18	QGUG1296AA	Botton	1
○		19	QGUG1283AA	Botton	1
○		20	QGUG1293AA01	Botton	1
○		21	QGUG1297AA	Botton	1
○		22	QGUG1294AA	Botton	1
○		23	QGUG1291AA	Botton	1
○		24	QGUG1291AB	Botton	1
○		25	QGUG1288AA	Botton	1
○		26	QGUG1287AA01	Botton	1
○		27	QMFG4130AAK	Felt	1
○		28	QMFG4133AAK	Felt	1
○		29	QMFG4129AAK	Felt	1
○		30	QMFG4142AAK	Felt	1
○		31	QMFG4131AAK	Felt	1
○		32	QMFG4132AAK	Felt	1
		33	QMRG5070AAK	Felt	1
○		34	QGUG1292AA	Botton	1
○		35	QGUG1290AA	Botton	1
○		36	QMRG5069AAK	Felt	1
○		37	QSCG073AK	Shield	1
○		43	QKSGF014AAK	Battery Cover	1
		44	QKSGF007AA	DC IN Cover	1
○		45	QGAG3003AAK	Music Rack	1
○		46	QMFG1141AA	Felt	1

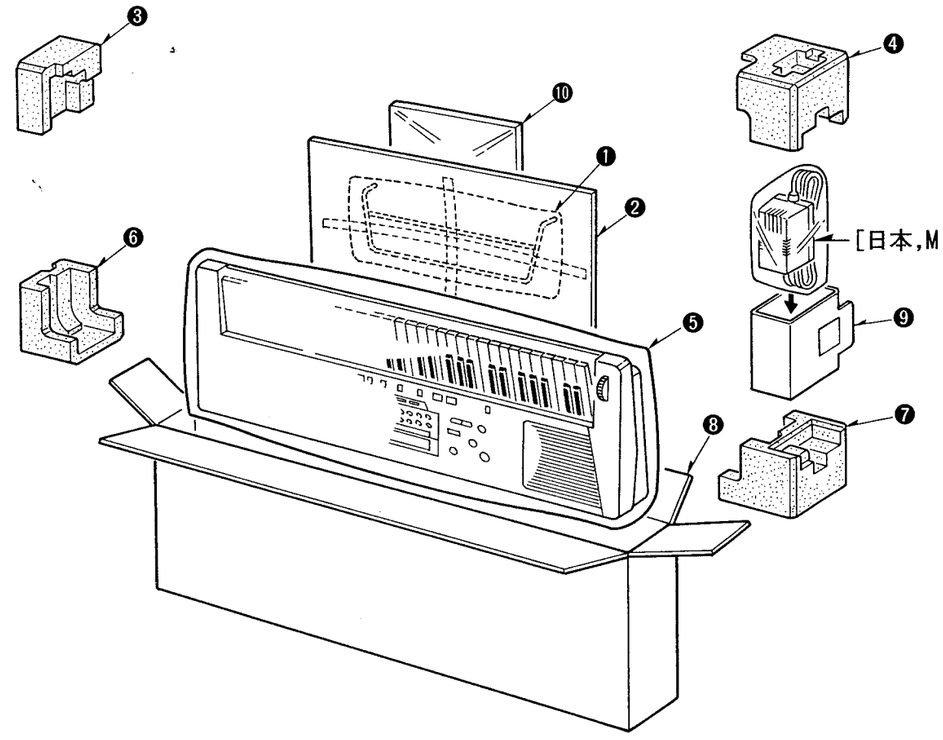
SX-KN500 CABINET & CHASSIS PARTS

Ref. No.	Part No.	Description	P/S
	SCREWS & WASHERS		
N1	XTW3+10Q	Screw	37
N2	XTW3+10J	Screw	2
N3	XTB3+14JFZ	Screw	2
N4	XTW3+20Q	Screw	27
N5	XTB3+12AFZ	Screw	4
N6	SNEG2620A	Speed Nut	2

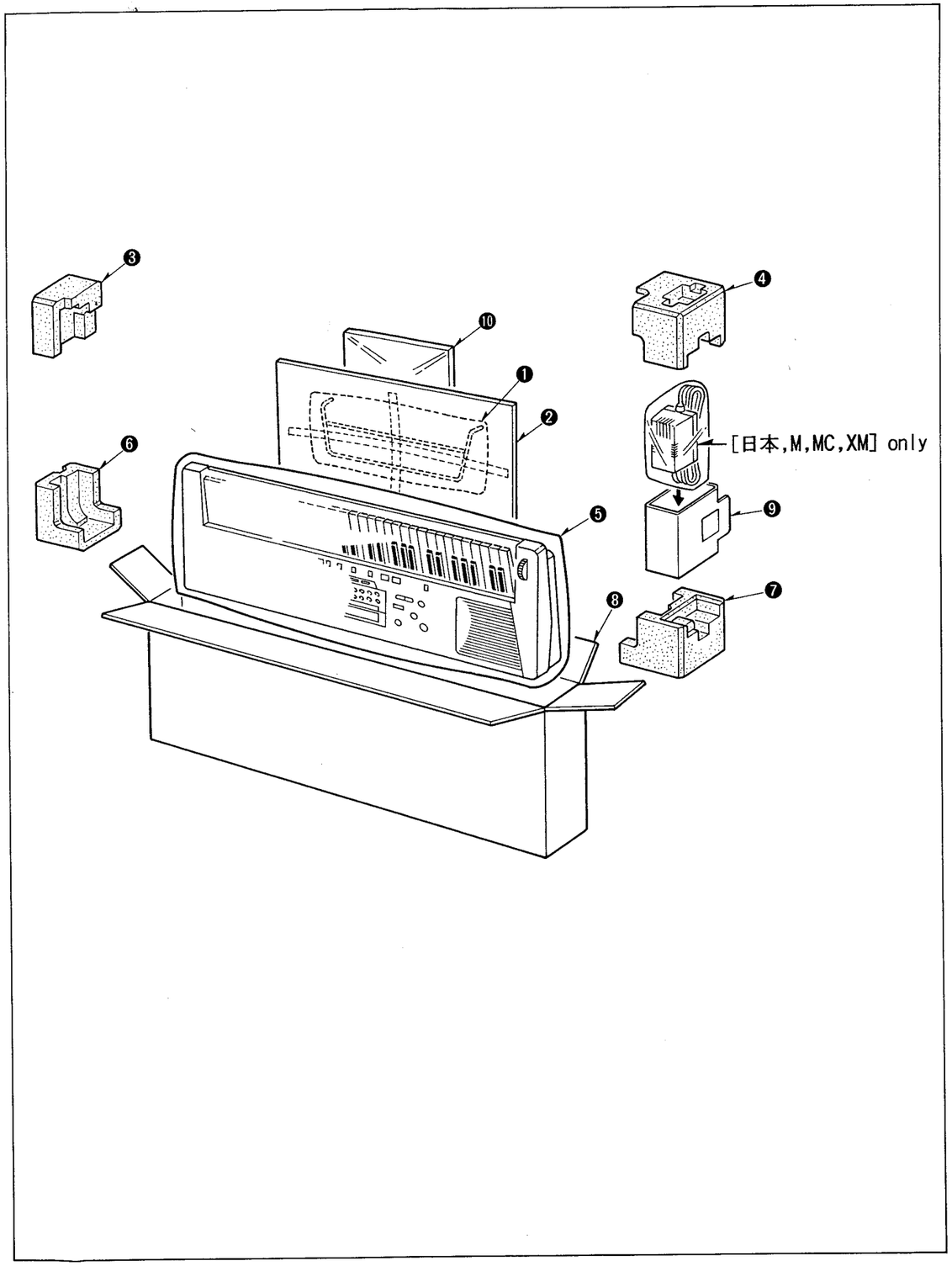
SX-KZ450 CABINET & CHASSIS PARTS

Ref. No.	Part No.	Description	P/S
○ 47	QKWG017AAK	Display Panel	1
○ 48 ABS	QMWG9021AAK	13 Keys	1
○ 49 ABS	QMWG9020AAK	12 Keys	4
○ 50	SHRG2160AK	Foot	4
○ 51 PS	QYPG1044ABK	Control Panel	1
○ 9	⟨ QMFG4128AAK	Speaker Net	2
	SCREWS & WASHERS		
N1	XTW3+10Q	Screw	37
N2	XTW3+10J	Screw	2
N3	XTB3+14JFZ	Screw	2
N4	XTW3+20Q	Screw	27
N5	XTB3+12AFZ	Screw	4
N6	SNEG2620A	Speed Nut	2

PACKING



PACKING



■ PACKING PARTS

Ref. No.		Part No.	Description	P/S
			PACKING PARTS	
○ 1	PE	QPHG017AAK	Polyethylene Cover	1
○ 2		QPNG0473AAK	Cardboard	1
○ 3	PS	QPNG0450AAK	Pad	1
○ 4	PS	QPNG0451AAK	Pad	1
○ 5		QPHG074AAK	Protection Cover	1
○ 6	PS	QPNG0448AAK	Pad	1
○ 7	PS	QPNG0449AAK	Pad	1
○ 8		QPGG0276ADK	Carton (SX-KZ450)	1
○ 8		QPGG0276AAK	Carton (SX-KN500)	1
○ 9		QPNG0475AA	Pad, M MC XM	
			OPERATING INSTRUCTION MANUAL	
○ 10		QQFGKZ450AA	Operation Instruction Manual, M	
○ 10-1		QQTG0273A	ENGLISH	1
○ 10		QQFGKZ450CA	Operation Instruction Manual, MC	1
○ 10-1		QQTG0274A	ENGLISH	1
○ 10-2		QQTG0275A	FRANCAIS	1
○ 10		QQFGKZ450DA	Operation Instruction Manual, XD XS	1
○ 10-1		QQTG0274A	ENGLISH	1
○ 10		QQFGKZ450BA	Operation Instruction Manual, XM	1
○ 10-1		QQTG0274A	ENGLISH	1
○ 10-2		QQTG0276A	ESPANOL	1
○ 10		QQFGKZ450EA	Operation Instruction Manual, X	1
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○ 10-2		QQTG0277A	中文	1
○ 10		QQFGKZ450FA	Operation Instruction Manual, XT	1
○ 10-1		QQTG0277A	中文	1
○ 10		QQFGKN500AA	Operation Instruction Manual, EN	1
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○ 10		QQFGKN500EA	Operation Instruction Manual, EK XS XR XL	1
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○ 10		QQFGKN500FA	Operation Instruction Manual, EZ EA	1
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